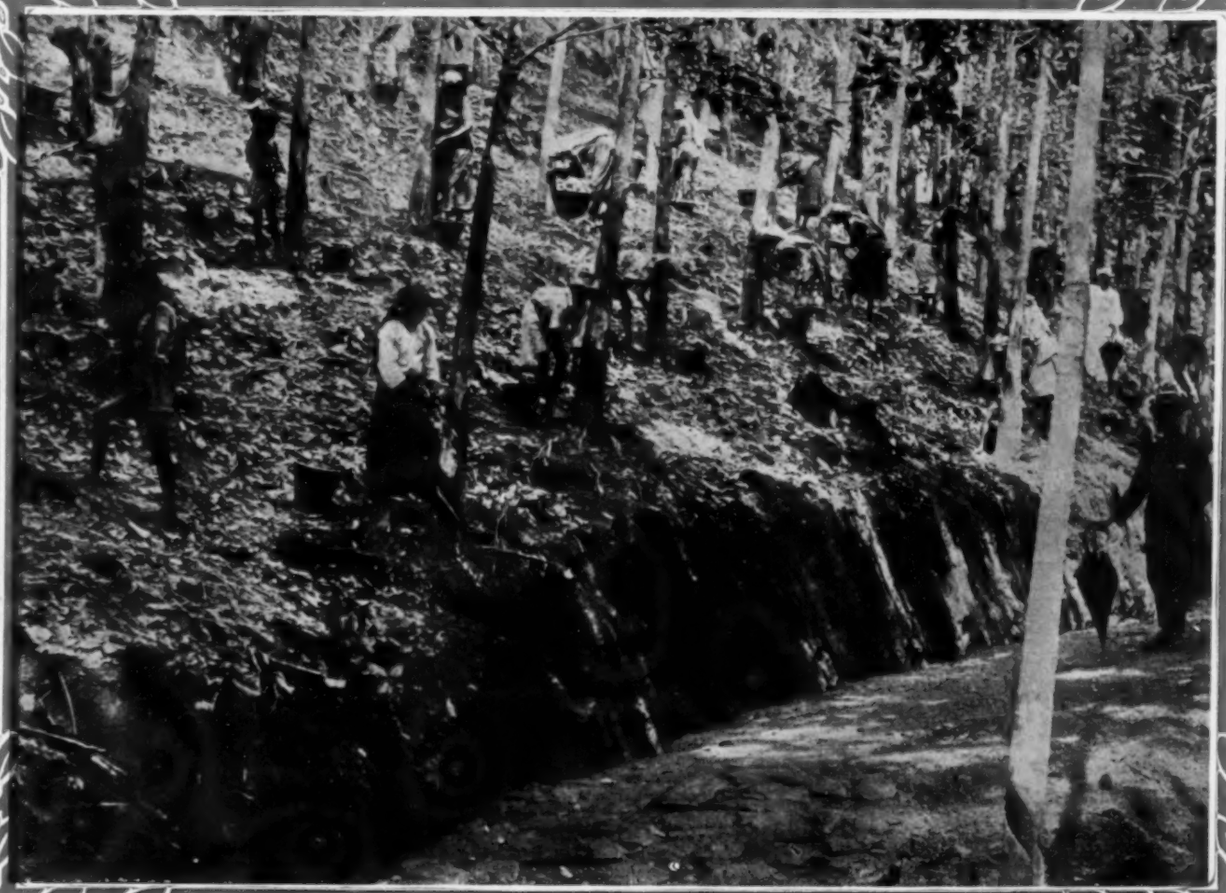
THE RUBBER AGE AND TIRE NEWS



Tappers at Work on a Ceylon Rubber Estate

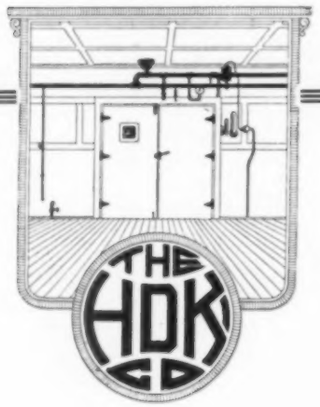
1917 PERIODICAL DIVISION

December 10th
1917

Ten Cents
a Copy

PUBLISHED SEMI-MONTHLY
BY
THE GARDNER-MOFFAT CO., Inc.
120 W. 32nd St. NEW YORK

DRYING FROM THE INSIDE-OUT



The Hunter Patent Process Revolutionizes Drying

There is not a user of crude rubber who can afford to overlook the HUNTER PATENT PROCESS.

By the scientific application of humidity, circulation and temperature, it accomplishes more than any other method.

The illustration below shows the simple manner of loading the rubber in the kiln, on specially designed trays placed on racks.

The kiln can be entered at any time for the inspection of the stock.

Note that the compounds are dried in their original packings at the same time and in the same kiln with the crude rubber.

The HUNTER PATENT PROCESS eliminates all lumps from the compounds and prevents the material from sticking to the back roll.

This insures an absolutely dry stock at all times as the material can be left in the kiln until wanted for use.

Put the Hunter Patent Process to the test by sending without obligation to our laboratories samples of your rubber to be processed and returned to you for your inspection.

Hunter Dry Kiln Company

26th Street and Cornell Avenue, Indianapolis, Ind.

The Hunter Dry Kiln Used in Connection with the Hunter Patent Process

The Seamless Rubber Company

INCORPORATED

NEW HAVEN, CONN.

Manufacturers of

Druggists' Rubber Sundries

including the famous Kantleek Brand

the original two year guaranteed line

Maderite Tennis Balls, approved by the U.S.N.L.T.A. Pure Gum Bathing Caps in attractive styles and colors, Foot-Ball Striking Bag and Basket Ball Bladders of Pure Gum Stock, Pitchers and Home Plates complete with spikes and other Sporting Goods

Main Offices and Factory, New Haven, Conn.

Inquiries solicited and given prompt attention

RECLAIMED RUBBER

THAT HAS STOOD THE TEST FOR YEARS

Special GRADES for the following TRADES:

INSULATED WIRE
BOOT *and* SHOE
MECHANICAL—AUTO TIRE
PROOFING
HARD RUBBER

We will cheerfully furnish samples upon request

Somerset Rubber Reclaiming Works

NEW BRUNSWICK, N. J.

Factory—East Millstone, N. J., Somerset County

Reclaimed Rubber

For All Purposes

QUALITY

VALUE

SERVICE

RUBBER REGENERATING COMPANY

Largest Reclaimers in the World

(FOUR FACTORIES)

Naugatuck, Conn.

MISHAWAKA, IND. MONTREAL, CAN. MANCHESTER, ENG.

Indexed Buyers' Guide to Rubber Products

Below will be found a list of Rubber Products and the index to the Rubber Companies who manufacture each item, compiled from information furnished by the manufacturers. The key symbols after the names of the articles refer to the names of manufacturers that appear in the Alphabetical List of Rubber Manufacturers that follows this BUYERS' GUIDE. Further information for Buyers will be gladly furnished by The Rubber Age and Tire News

Mechanical Rubber Goods

Aircraft Equipment, D40.
Anti-Rattlers, B42, B72, C54, C64, E32, F20, F22, G50, I12, M42, N28, U4, U10, C6, D38, G22.
Arch Supporters, F22, L30, C6, G22.
Bags, Air, A40.
Bags, Gas, D6, F36, I12, M42, M52, M66, P20, Q4, U10, C6, D38, G22, A38.
Bags, Gas Main, D6, M52, M66, P20, Q4, U10, C6, G22.
Bags, Hat, B42, C64, E26, M50, N28, P20, R20, U4, U10, C6, G22.
Balata, Specialties, B42, D22, R18, S68, U10, C6.
Balls, Closet, M50, M52, S50, S68, U10, C6, W26, G22, C18.
Balls, Faucet, U10, C18.
Balls, Fuller, B26, C40, C54, E22, E26, I12, M42, M50, M52, P20, R18, S50, S68, T6, U10, V22, C6, D38, W26, G22, C18, A38.
Balls, Gas Main, D6, M52, U10, C6, G22.
Balls, Tank, C40, M50, M52, S68, U10, C6, G22, C18, A38.
Balls, Trap, B42, M52, U10, C6, G22.
Balls, Valve, B42, C40, I12, M50, M52, R18, S68, U10, C6, D38, W10, G22, C18.
Band, Tread, T3.
Bands, Hose, U10.
Bands, Umbrella, D6, S50, U10, C6, D38, G22.
Belting, Balata, B42, B72, D22, M24, R18, S68, U4, U10, V6, C6.
Belting, Band Saw Bands, B42, B72, C40, C54, E26, G50, M50, N28, P20, Q4, R18, R20, U4, U10, V12, C6, D38, W10, G22.
Belting, Canvas, B50, D22, M24, M50, N52, R20, S68, U4, U10, V6, C6, D38.
Belting Conveyor, B42, B50, B72, C40, C54, D22, E26, G30, G50, H8, M24, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V6, V12, V42, C6, D38, G22, C18.
Belting, Elevator, B42, B50, B72, C40, C54, D22, E26, G30, G50, H8, M24, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V6, V12, W42, C6, D38, G22.
Belting, Endless, B42, B50, C40, C54, D22, E26, G30, G50, M24, M50, M52, N28, T20, Q4, R18, R20, S68, U4, U10, V6, V12, W42, C6, D38, G22.
Belting, Flange Conveyor, B42, N28, R18, R20, S68, U4, U10, W42, C6, D38, G22.
Belting, Friction Surface, B42, B50, C40, C54, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.
Belting, Gold Dredger, B42, B50, E26, G30, H8, P20, Q4, R18, R20, U4, U10, V6, V12, C6, D38, G22.
Belting, Grader, B42, B50, B72, C40, D22, E26, G30, G50, H8, M50, M52, N28, Q4, R18, R20, T6, U4, U10, V6, V12, C6, D38, G22.
Belting, Grain Elevator, B42, B50, B72, C40, C54, E26, G30, G50, H8, M50, M52, N28, P20, Q4 R18, R20, S68, U4, U10, V6, V12, W42, C6, D38, G22.
Belting, Laggings, B72, C54, E26, G30, G50, M52, Q4, R18, R20, U4, U10, C6, D38, G22.
Belting, Oil Well, B42, B50, B72, C40, C54, D22, E26, G30, G50, H8, M52, N28, P20, Q4, R18, R20, T6, U4, U10, V6, V12, C6, D38, G22.
Belting, Polishing, B42, C40, C54, E26, G30, G50, M50, M52, Q4, R18, R20, S68, U4, U10, C6, D38, G22.
Belting, Pulley Covering, B42, B50, B72, C54, E26, G30, G50, M50, M52, Q4, R18, R20, T6, U4, U10, V12, C6, D38, G22, A38.
Belting, Splicing, B42, C40, D22, E26, G30, G50, R18, R20, U4, U10, C6, G22.
Belting, Stitched, B42, B50, C40, C54, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.
Belting, Transmission, A24, B42, B50, B72, C40, C54, D22, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V6, V12, W42, C6, D38, G22.
Belting, Vanner, B42, N28, R18, R20, U4, U10, V6, C6, D38, G22.
Belts, B42, B50, B72, C40, C54, D22, E26, G10, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V6, V12, W42, C6, D38, G22.
Belts, Polishing, B42, C40, C54, E26, G10, G50, M50, M52, Q4, R20, S68, U4, U10, C6, D38, G22.
Bindings, Rubber Carpet, U10.
Blades, Squilgee, C18.
Blankets, B42, B50, B72, G50, M52, R20, S68, U10, C6, D38, G22.
Blankets, Printers', B42, G50, K12, M52, R20, S68, U10, C6, D38, G22, A38.
Blocks, B42, B72, C40, C54, C64, F22, G50, H8, M50, M52, R18, R20, S50, U4, U10, C6, D38, W26, G22.
Blocks, Hat, U10.
Bolsters, A58, B42, C54, G50, R18, R20, U10, C6, D38, G22.
Brewers' and Bottlers' Supplies, B72, C40, C54, C64, E22, E26, F20, G50, M50, M52, N6, R18, R20, S50, S68, T6, U4, U10, W42, C6, D38, W10, G22, C18, A38.
Brushes, Rubber, M42, S50, U10, C6, G22, C18.
Buckets, Pump, B72, C64, M50, M52, R18, S50, U10, C6, G22, C18.
Bulb Sets, D2, D6
Bulbs, Horn, U10.
Buffers, C40, C54, C64, E22, E26, G30, G50, N6, R18, S50, S68, U4, U10, C6, D38, G22, A38.
Bumpers, A88, B42, B72, C32, C40, C54, C64, E22, E26, E32, F20, F22, G30, G50, H8, I12, M42, M50, M52, M66, N28, Q2, Q4, R18, R20, S50, S68, T6, U4, U10, V12, V22, C6, D38, P52, W26, W10, G22, C18, A38, D40.
Bumpers, Bar, C54, C64, F20, G50, H8, I12, M42, M50, M52, T6, U4, U10, C6, D38, G22, C18.
Bumpers, Car Seat, C54, C64, F20, G30, G50, H8, I12, M50, M52, N28, Q4, R20, S50, S68, T6, U4, U10, V12, C6, D38, W26, G22, C18.
Bumpers, Door, B72, C40, C54, C64, F20, F22, G30, G50, H8, M42, M50, M52, Q4, R18, S50, S68, U4, U10, C6, D38, W26, G22, C18, A38.
Bumpers, Furniture, C40, C64, F20, M50, M52, N28, Q4, R18, R50, U4, U10, C6, D38, G22, C18.
Bumpers, Screw, C64, F20, I12, M50, M52, P4, U4, U10, C6, D38, G22, C18.
Bumpers, Tank, C40, F20, M50, M52, Q4, U4, U10, C6, D38, G22, C18.
Bumpers, Wagon, A58, B42, C40, C54, C64, D36, E32, F20, F22, G50, M50, M52, N28, Q6, R18, S50, T6, U4, U10, V12, C6, D38, G22, A38.
Bushings, A76, B72, C40, C64, E22, E26, F20, H8, M42, M50, M52, R18, S50, S68, T6, U4, U10, V12, C6, G22, C18, A34.
Bushings, Flanged, B72, C40, F20, H8, M42, M50, M52, S50, U4, U10, V12, C6, G22, A38.
Cement Rubber, H20, V4, U2.
Cement, Leather, E16.
Clamps, Hose, A24.
Cloths, Card, B66, U10, C6, G22.
Cloth, Tobacco, B50.
Collets, M52, U10, C6, G22, C18.
Connections, Hose, B50, C40, C54, C64, E26, E32, F20, G30, M50, M52, T6, U4, U10, C6, D38, M82, W10, G22, C18, A38.
Cord, Rubber, B42, B50, B72, C40, C54, C64, D6, E26, F20, G30, G50, H8, M50, M52, N28, R18, R20, S50, U4, U10, V12, C6, D38, W26, G22.
Cores, Hose, U10.
Couplings, Hose, U10, A24, M82.
Coverings, Gin Roll, U10.
Cups, Force, C54, C64, D36, E22, E26, E32, F20, F36, G50, M42, M52, Q4, S50, S68, U10, V22, C6, D38, W26, G22, C18, A38.
Cushions, Billiard, B42, B50, B68, C54, G30, R20, S50, U4, U10, C6, D38, G22.
Cushions, Bradley Hammer, U10.
Cushions, Heel, F32, L30, G22.
Cushions, Ring, B42, C40, D2, D6, S50, U4, U10, C6, G22.
Decarbonizers, S37.
Diaphragms, B42, B72, M52, U10, C6, G22, C18.
Discs, Bib, B24, C40, C54, E22, M42, M50, M52, P20, S50, S68, U10, V22, C6, G22, C18, A38.
Discs, Bottlers', B72, C40, E26, F20, G50, H8, M52, S50, S68, U10, C6, G22, C18, A38.
Discs, Valve, B24, B42, C40, C54, E22, E26, F20, F22, G30, G50, M50, M52, P20, Q4, R18, S50, S68, U4, U10, V12, C6, D38, W10, G22, C18.
Dolls, Rubber, D6, F14, M52, U10, C6.
Dressing, Belt, U10.
Elbows, E26, M50, M52, S50, S68, U10, V22, C6, G22, C18, A34.
Experimental Work, B72, C40, C54, E22, E26, E32, G50, M42, M50, N6, R42, S50, T6, U10, V12, C6, D38, W10.
Eyes, Bleachery, B42, U10.
Faucet Attachments, M42, M52, C6, G22, C18.
Feet, Typewriter, C45, C64, E32, G50, H8, I12, M42, M52, R18, R50, S50, U10, V12, V22, C6, D38, W26, G22, C18, A38.
Filling, Pulley or Sheave, C54, H8, M50, M52, N28, Q4, R18, T6, U10, C6, D38, G22.
Fire Appliances, A24, B50, G50, U4, U10, C6, D38, G22.
Fittings, Hydraulic, C40, T6, U10, C6, M82, G22, A38.
Flange, Closet Floor, C54, E32, G50, M50, M52, Q4, T6, U10, C6, D38, G22, C18.
Furnace Sets, D6, F32, M50, M52, Q4, S50, U10, C6.
Gaskets, Air Hose, B42, C40, C54, E22, F20, G30, G50, H8, M50, M52, P20, Q4, R18, R20, S50, S68, T6, U4, U10, C6, D38, P52, W26, W10, G22, C18, A38.
Gaskets, Basin, B42, C54, E22, F20, G50, I12, M50, M52, Q2, Q4, S68, T6, U4, U10, C6, D38, G22, C18, A38.
Gaskets, Screen, U10.
Gaskets, Sink, B42, C54, E22, F20, G50, I12, M42, M50, M52, Q4, S68, T6, U4, U10, C6, D38, G22, C18, A38.
Gaskets, Unvulcanized, P38.
Gum, Dental, D6, G50, H60, M42, T14, T16, U10, C6, G22, A34.
Gum, Hat, U6.
Gum, Rubber, S37.
Gum, Stamp, B42, C64, F20, G50, H60, M42, M50, M66, S50, T14, U4, U10, C6, D38, G22.
Heels, A88, B42, B50, C32, C42, D36, E26, E32, F20, F32, F32, G10, G16, G30, G50, L30, M52, M66, N28, Q2, R20, T2, T16, U4, U10, C6, D38, P52, W26, W10, G22.
Hose Accessories, B50, C40, C64, E26, G50, M50, N28, R20, T6, U10, C6, D38, M82, G22.
Hose, Acid Tubing, B42, B50, C40, C54, C64, D6, E20, E26, G30, G50, H8, M50, M52, M66, N28, P20, Q4, R18, R20, S50, S68, T6, U4, U10, V12, W42, C6, D38, W10, G22.
Hose, Agricultural, B42, B50, C40, C54, C64, E20, E26, G30, G50, M50, M52, N28, Q4, R18, R20, S68, T6, U4, U10, W42, C6, D38, G22, D40.
Hose, Air, U10.
Hose, Air, Woven Steel Armored, W42.
Hose, Air Brake, B42, B50, C54, E20, G30, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, U4, U10, W42, C6, D38, G22.
Hose, Air Drill, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, M82, G22.
Hose, Aeroduct Vacuum, B42, B50, C40, E20, E26, G50, H8, M50, P20, Q4, R20, S68, T6, U4, U10, C6, G22.
Hose, Armored, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, M82, G22.
Hose, Ash Pit, B42, B50, C40, C54, E20, E26, G50, H8, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, M82, G22.
Hose, Automobile Radiator, B42, B50, C32, C40, C54, C64, E20, E26, E32, F20, G30, G50, H8, I12, M42, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22, A38.
Hose, Beer Tubing, B42, B50, C40, C54, C64, D6, E20, E26, G30, G50, H8, M50, M52, M66, N28, P20, Q4, R18, R20, S68, T6, T16, U4, U10, V12, W42, C6, D38, G22, C18.
Hose, Boiler Test, B42, B50, C40, C54, C64, E20, E26, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.
Hose, Boiler Washout, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, M82, G22.
Hose, Braided Chemical, B42, B50, E20, E26, H8, M50, M52, N28, P20, Q4, R18, R20, S68, U4, U10, W42, C6, D38, G22.
Hose, Braided Pneumatic, B42, B50, C40, E20, E26, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, W42, C6, D38, G22.
Hose, Brewers', B42, B50, C40, C54, C64, D6, E20, E26, G30, G50, H8, M50, M52, M66, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.
Hose, Cement Gun, B42, B50, C64, E20, G50, M50, N28, P20, R20, S68, U4, U10, V12, C6, D38, G22.
Hose, Chemical Engine, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.
Hose, Cloth Inserted Tubing, B42, B50, C40, C54, C64, D40, E20, E26, E32, F22, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.
Hose, Coal Sprinkler, B42, B50, C40, C54, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, T6, U4, U10, V12, W42, C6, D38, M82, G22.
Hose, Coal Sprinkler, Woven Steel Armored, W42.

Indexed Buyers' Guide to Rubber Products—Continued

Mechanical Rubber Goods—*Continued*

Hose, Coke, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, T6, U4, U10, V12, W42, C6, D38, M82, G22.

Hose, Compressed Air, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, M82, G22.

Hose, Conducting, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, M82, G22.

Hose Connections, A24, B42, B50, B52, C40, C64, E26, G50, M50, N28, Q4, R18, R20, S68, T6, U4, U10, C6, D38, M82, G22, A38.

Hose, Cotton, B50, C54, E26, G50, H8, M50, N28, Q4, R18, R20, S68, U4, U10, V12, W42, C6, D38, G22.

Hose Coverings, B42, B50, C40, E20, E26, G50, M50, N28, Q4, R18, R20, S68, U4, U10, V12, C6, D38, M82, G22.

Hose, Deck, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, T6, U4, U10, V12, W42, C6, D38, G22.

Hose, Discharge Agricultural, M52, U10.

Hose, Divers', B42, B50, C54, C64, E20, E26, G30, G50, H8, M50, N28, P20, R18, R20, S68, T6, U4, U10, V12. C6, D38, G22.

Hose, Dredging Sleeves, B42, B50, C40, C54, C64, E26, G30, G50, H8, M50, N28, P20, Q4, R18, R20, T6, U4, U10, V12, C6, D38, G22.

Hose, Dynamo Steam, B42, B50, C40, C54, E20, E26, H8, M50, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, G22.

Hose, Factory Fire, B42, B50, C40, C54, E26, G30, G50, H8, M50, N28, Q4, R18, R20, S68, U4, U10, V12, W42, C6, D38, G22.

Hose, Fire, B42, B50, C40, C54, E20, E26, G30, G50, H8, N28, Q4, R18, R20, S68, U4, U10, V12, W42, C6, D38, G22.

Hose, Fire, Cotton, Rubber Lined, B42, B50, C40, C54, E26, G30, G50, H8, N28, Q4, R18, R20, U4, U10, V12, W42, C6, D38, G22.

Hose, Fire Engine Suction, B42, B50, C40, C54, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, G22.

Hose, Fire Extinguisher Tubing, B42, B50, C40, C54, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Hose Fittings, A24, B42, B50, C40, E26, G50, H8, N28, R20, U10, V12, C6, D38, M82, G22.

Hose, Flue Cleaning, B42, B50, C40, C64, E20, E26, G30, G50, H8, M50, N28, P20, Q4, R18, R20, S68, T6, U4, U10, C6, D38, M82, G22.

Hose, Garden, B42, B50, C40, C54, C64, D40, E20, E26, G30, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Hose, Gas, B42, B50, C40, C54, **C64, E20, E26, F22, G30, G50,** H8, M50, M52, P20, Q4, R18, R20, T6, U4, U10, W42, **C6,** D38, M82, G22.

Hose, Gasoline, B42, B50, C40, C54, C64, D40, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, **W42, C6, D38, G22.**

Hose, Gas Tubing, B42, B50, C40, C54, C64, E20, E26, F20, G30, G50, H8, M50, M52, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, **D38, G22, C18,** A38.

Hose, Hard Rubber Suction, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, **D38, G22.**

Hose, Hot Water, B42, B50, C40, C54, C64, D40, E20, E26, **G30,** G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, **D38,** M82, G22.

Hose, Hydraulic, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Hose, Lathe Turret, M52.

Hose, Lawn, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, **D38, G22.**

Hose, Linen, B50.

Hose, Mill and Factory, B42, B50, C40, C54, E20, E26, G30, G50, H8, N28, C6, D38, G22.

Hose, Molded, B42, B50, C40, C54, E20, E26, G30, G50, H8, J10, M50, N28, P20, Q4, R18, R20, U4, U10, W42, C6, D38, **G22.**

Hose, Oil, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68 T6, U4, U10, V12, **W42,** C6, D38, M82, G22.

Hose, Oil Suction, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, **V12, W42, C6, D38, G22.**

Hose, Paint, B42, B50, C40, C54, C64, E20, E26, G50, H8, M50, P20, R18, R20, T6, U4, U10, **V12, C6, M82,** G22.

Hose, Phosphate Suction, B42, B50, C40, C54, E20, E26, G50, H8, M50, N28, P20, Q4, R18, **R20, S68, T6, U4,** U10, **V12,** C6, D38, G22.

Hose, Pneumatic, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, **W42, C6, D38, M82, G22.**

Hose, Radiator Steam, U10.

Hose, Rubber, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, J10, M50, M52, M66, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, V42, **C6, D38 M82,** G22.

Hose, Sand Blast, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42 C6, D38, G22.

Hose, Sand Suction, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, **U10, V12, W42, C6, D38,** G22.

Hose, Smooth Bore Suction, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, **W42 C6, D38,** G22.

Hose, Soda, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, **U4, U10, V12,** C6, D38, G22.

Hose, Spray, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, **R20, S68, T6, U4, U10, V12,** C6, D38, M82, G22.

Hose, Steam, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, **V12, W42, C6, D38, M82, G22.**

Hose, Steam Drill, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, **V12, W42, C6, D38, M82, G22.**

Hose, Steam Woven Steel Armored, W42.

Hose, Street Washing, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, **V12, W42, C6, D38, G22.**

Hose, Submarine, B42, B50, C40, **E20, E26, G50, H8, M50, N28, P20, Q4,** R18, R20, **S68, U4,** U10, C6, G22.

Hose Suction, B42, B50, C40, C54, C64, E20, E26, G30, G50, **H8,** M50, M52, N28, P20, Q4, **R18,** R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Hose, Tanner, B42, B50, C40, C54, E20, E26, G50, H8, M50, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, G22.

Hose, Tender or Tank, B42, B50, C40, C54, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, U12, V12, W42, C6, D38, M82 G22.

Hose, Turbine Cleaner, B42, B50, C40, C54, E20, E26, G50, **H8,** M50, P20, Q4, R18, R20, **S68,** T6, U4, U10, W42, C6, D38, G22.

Hose, Underwriters, B42, B50, C40, E20, E26, G30, G50, **N28,** Q4, R18, R20, S68, U4, **U10,** W42, C6, D38, G22.

Hose, Vacuum, B42, B50, C40, E20, E26, G30,, G50, H8, M50, M52, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Hose, Vinegar, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, P20, Q4, R18, R20, S68, T6, U4, U10, V12. C6, D38, G22.

Hose, Voice Tubing, B42, B50, C54, E20, E26, G50, H8, M52, Q4, R18, R20, S68, U4, U10, V12, C6, D38, **M82,** G22.

Hose, Water, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, J10, M50, M52, N28, P20, Q4, R18, **R20, S68, T6, U4, U10,** V12, W42, C6, D38, M82, G22.

Hose, Water, Woven Steel Armored, W42.

Hose, Wine, B42, B50, C40, C54, C64, E20, E26, G50, H8, M50, M52, M66, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, G22.

Hose, Wire Bound, B42, B50, C40, C54, C64, E20, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, M82, G22.

Keys, Typewriter, U10, C6.

Lagging, B72, C54, C64, G50, R18, T6, U4, U10, C6, G22, B72.

Linings, Brake, E26, E32, G30, H8, J10, Q4, T6, U4, U10, C6, G22.

Linings, Hose, U10.

Linings, Inner, D38.

Linings, Robe, B50.

Mallets, B42, C54, C64, D6, E22, F20, G50, H8, M42, M50, M52, P20, Q4, R18, R20, **S50, T6,** U4, U10, V12, C6, P52, G22, A38.

Matting, Corrugated, B42, B50, B68, C40, C54, E26, E32, F20, F36, G30. G50, H8, **M50, M52,** N28, P20, Q2, Q4, R18, **R20,** S68, U4, U10, V12, W42 C6, D38. S54, G22, A38.

Matting, Bath Tub, B42, B50, C54, E26, F20, G50, H8, M50, M52, N28, P20, Q4, S68, T6, U4, U10, C6, D38, G22.

Matting, Cuspidor, B42, B50, C40, **C54, E26, E32, F20, G50, M50,** M52, N28, P20, Q2, Q4, R18, S68, U4, U10, V12, V22, W42, C6, D38, G22, A38.

Matting, Door, B42, B50, C40, C54, E26, E32, F20, F36, G50, H8, M50, M52, N28, P20, Q2, Q4, R18, R20, S68, U4, U10, V12, W42, C6, D38, G22, **A38.**

Matting, Elevator, B42, B50, C40, C54, E26, F20, F36, G50, H8, **M50, M52, N28, P20, Q4, R18,** R20, S68, T6, U4, U10, V12, **W42, C6, D38,** G22.

Matting, Floor, B42, B50, C40, C54, E26, **F20, F36, G30,** G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, U4, U10, V12, **W42, C6, D38,** G22.

Matting, Knob, B42, B50, C40, C54, F20, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, **U4, U10, W42, C6, D38, G22.**

Matting, Perforated, B42, B50, C40, C54, E26, E32, F20, F36, G30, G50, H8. M50, M52, N28, B20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, G22, A38.

Matting, Pneumatic, B42, E32, H8, P20, R18, U4, U10, C6, G22.

Matting, Pyramid, B42, B50, C54, E26, F20, H8, M50, M52, N28, P20, Q2, Q4, R18, R20, S68, U4, U10, C6, D38, G22.

Matting, Stair, B42, B50, C40, C54, E26, F20, G30, G50, H8, M50, M52, N28, P20, Q2, Q4, R18, R20, S68, U4, U10, V12, C6, D38, G22, A38.

Mechanical Rubber Goods, B42, B50, B72, C14, C40, C54, C64, E22, E26, E32, F20, G30, G50, H8, I12, M50, M52, **M66, N6,** N28, P20, Q4, R18, **R20, R42,** S50, S68, T6, U4, **U10, V12,** V22, W42, C6, D38, W26, G22, C18, A38.

Molded Goods in Customers' Molds, B24, R50, C18.

Molded Mechanical Goods, B72, T16, U10, C18.

Nozzles, A24, B50, C40, R20, S50, S68, T6, U10, C6, D38, G22.

Nuts, Lock, U10, C6.

Oil Well Supplies, U10.

Packers, B72, C40, C54, C64, E22, E26, H8, M50, N28, P20, R18, S50, S68, U4, U10, V12, C6, W10, G22, C18.

Packing, B26, B42, B50, B72, C14, C32, C40, C54, C64, E22, **E26,** E32, G30, G38, G50, H8, M50, M52, N88, P20, Q4, R18, R20, S68, T6, U4, U10, V12. W42, C6, D38, P52, W10, G22, C18.

Packing, Boiler Gaskets, B26, B42, B72, C14, C40, C54, C64, E22, E32, G30, G38, G50, J10, M50, M52, N28, T20, Q4, R20, **S50,** S68, U4, U10. V12, C6, D38, W10, G22.

Packing, Coil, B26, B42, C14, C40, C54, E22, E26, G38, G50, **H8,** J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, **U10,** V12, W42, C6, D38, W10, G22.

Packing, Gaskets, B26, B42, B72, C14, C40, C54, E22, G30, **G38,** G50, J10, M50, M52, N28, P20, Q4, R18. R20, S68, U4, U10, V12, W42, C6, D38, W10, G22, C18, A38.

Packing, Oil Well, B26, B42, B72, C14, C40, C54, C64, E22, E26, G30, G38, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S50, S68, T6, U4, U10, V12. C6, D38, W10, G22.

Packing, Radiator Discs, B42, C14, C40, C54, E22, E32, G50, M52, P20, Q4, R20, S50, S68, T6, U4, U10, C6, G22.

Packing, Ring, B26, B42, C14, C40, C54, E22, E26, G38, G50, H8, J10, M50, M52, P20, Q4, R20, S68, T6, U4, U10. W42. C6, D38, G22.

Packing Sets, B26, B42, C14, C40, E22, G38, G50, H8, J10, M52, P20, Q4, R20, S68, U4, U10, W42, C6, G22.

Packing, Sheet, B26, B42, B50, B72, C14, C40, C54, C64, E22, E26, E32, G38, G50, H8, J10, M50, M52, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Packing, Spiral, B26, B42, C14, C40, C54, E26, G30, G38, G50, H8, J10, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, G22.

Pads, Horseshoe, C32, C64, **E32,** F20, M50, M52, N28, R18, R20, U10, C6, D38, P52, W10, **G22,** C18.

Pads, Landing, U10, C18.

Pails, U10.

Pipes, Hose, U10.

Pipes, Play, B50, G50, H8, N28, P20, R20, U10, C6, D38, G22.

Platens, Typewriter, B42, G50, N28, R18, S50, U10, V12, C6, G22.

Plugs, Tapered, C54, E22, G50, M52, R18, U10, V12, C6, **G22,** C18.

Plumbers' Specialties, C40, E22, G50, I12, M50, M52, Q4, **S50,** S68, U10, V22, C6, D38, W26, W10, G22, C18.

Pulleys, Rubber Faced, R42.

Pyrographic Sets, D6.

Racks and Reels, Hose, U10, **A24.**

Railroad Supplies, A38, B42, C40, C54, E26, E32, G30, G50, **H8,** M50, N28, P20, R18, **R20, S68,** U4, U10, V6, C6, D38, **W26,** W10, G22.

Rings, A38, B42, B72, C40, C54, C64, E22, E26, F20, G30, **G50,** I12, M42, M50, M52, N28, **R18,** R20, S68, T6, U4, U10. V12, D38, P52, W26, G22, C18, C40, S68.

Rings, Asbestos, U10.

Indexed Buyers' Guide to Rubber Products — Continued

Mechanical Rubber Goods—*Continued*

Rings, Beer Keg Washer, B42, B72, C40, C54, C64, E22, E26, F20, G50, H8, M50, M52, N28, R18, R20, S50, S68, T6, U4, U10, C6, C18.
Rings, Brewers, U10.
Rings, Cloth Inserted, B42, C40, C54, E22, F20, G50, H8, M50, M52, N28, P20, R18, R20, S68, U4, U10, V12, C6, D38, G22.
Rings, Combination Hydraulic, U10.
Rings, Coupling Packing, U10.
Rings, Cream Separator, B42, C40, C54, E26, F20, G50, H8, I12, M50, M52, N28, P20, R18, R20, S50, S68, T6, U4, U10, V12, C6, D38, G22.
Rings, Duster, S50, S68, U4, U10, V12, C6, G22.
Rings, Fruit Jar, B50, C80, E26, G50, H8, M50, M52, P38, R18, S68, U4, U10, C6, D38, G22, C18.
Rings, Gage Glass, U10, C18.
Rings, Half Round, U10, C6, G22, C18.
Rings, Hydraulic Press, A88, B42, C32, C40, C54, F20, G50, H8, M50, M52, S68, T6, U4, U10, V12, C6, W26, G22.
Rings, Ice Machine, C40.
Rings, Packing, S68.
Rings, Pipe Coupling, B42, C40, C64, G50, H8, I12, M50, M52, N28, R18, S68, U4, U10, C6, G22, C18, A38.
Rings, Plunger, B42, C40, G38, H8, I12, J10, M50, M52, Q4, R20, S50, S68, T6, U4, U10, C6, G22, C18.
Rings, Rainbow, U10.
Rings, Round Flange, B42, C40 C54, E22, F20, G50, H8, J10, M50, M52, Q4, R18, R20, S68, T6, U4, U10, C6, D38, G22, C18.
Rings, Square Flange, B42, B72, C40, E22, F20, G50, H8, J10, M50, M52, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, G22, C18.
Rings, Testing, C40, E22, G50, H8, M50, M52, N28, S50, T6, U4, U10, C6, G22, C18.
Rings, Umbrella, D6, F2, M52, S68, U4, U10, C6, D38, G22, C18.
Rollers, Paper Machine, A88, B42, C40, C54, E22, E26, F20, M52, R20, R42, U4, U10, C6, G22.
Rolls, A88, B42, B72, C40, C54, C64, E22, E26, F20, G50, H8, M50, M52, N28, Q4, R20, R42, S50, T6, U4, U10, C6, D38, W10, G22.
Rolls, Covered, A88, B42, B72, C32, C40, C54, C64, E22, E26, E32, F20, G16, G50, H8, M42, M50, M52, N6, N28, Q4, R18, R20, R42, S50, T6, U4, U10, V12, C6, D38, W10, G22.
Rolls, Wringer, A88, B42, C40, C54, E22, F20, G30, G50, M50, M52, Q4, R18, R42, U4, U10, C6, D38, W10, G22, A38.
Rubber, Beet Sugar, C54, E22, H8, M50, M52, R18, R20, S50, U4, U10, C6, W10, G22.
Rubber Casing Head, B42, B72, C54, C64, H8, M50, M52, R18, R20, U4, U10, C6, G22.
Rubber, Channel Sash, B50, B72, C40, C54, C64, B6, F20, H8, M42, M50, M52, N28, Q4, R18, R20, T6, U4, U10, C6, G22, A38.
Rubber, Glazing, B60, C64, B72, F20, H8, M42, M50, M52, Q4, R18, U4, U10, C6, A38.
Rubber Stock, Unvulcanized, U10, A34.
Rubbers, Beer Pump, U10, C18.
Rubbers, Massage, C40, F14, M42, M52, S50, U10, C6, D38, G22.
Rubbers, Shoe Machinery, U4, U10, C6.
Rubbers, Swab, B72, C64, H8, P20, Q4, R18, R20, T6, U4, U10, V12, C6, W10, G22.
Rubbers, Valve, C40.
Rubbers, Whip Socket, H8, M52, U4, U10, C6, G22, C18.
Seats, Post, I12, M50, R18, U4, U10, C6, G22, C18.
Shoes, Horse, U10.
Sleeves, Dredging, B42, B50, C40, C54, C64, E26, G30, G50, H8, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, G22.
Soles, A88, B42, B50, C32, C42, E26, E32, F20, F22, G16, G30, G50, L30, M52, M65, M66, Q2, R18, R20, T2, U4, U10, C6, D38, G22.
Soling, A88, B42, B50, B72, C32, C42, C54, E26, E32, F20, G50, M65, M66, N28, R18, R20, U4, U10, C6, D38, G22.
Solution, Acid, D38.
Solutions, Rubber, R34.
Splicing Compound, B22, B42, B50, C54, H8, M52, N28, M42, S68, U4, U10, C6, D38, G22.
Springs, B42, B72, C40, C54, E22, E26, F20, G50, H8, M50, N28, R18, S50, S68, T6, U4, U10, C6, D38, W26, G22, C40.
Springs, Cylinder Hub, U10.
Springs, Die Stamping, U10.
Springs, Door, B42, C40, C54, C64, F20, H8, M50, R18, S50, S68, U4, U10, C6, W26, G22.
Springs, Extraction, C40.
Sprinklers, Lawn, U10, A24.
Sponge Rubber, B42, F14, H8, M42, M66, R20, S50, S68, T14, U10, C6, G22.
Stamp, Rubber, B42, C40, C64, F20, G50, M42, M50, M66, P20, R18, S50, T14, U10, C6, D38, G22.
Steps, Rubber Covered, U10.
Stopples, C54, C64, D6, F14, F36, H8, M50, M52, R50, S50, U10, C6, G22, C18.
Stopples, Chemical, U10.
Stoppers, Basin and Bath, E22, F36, H8, M42, M50, M52, Q2, Q4, U4, U10, V22, C6, W26, G22, C18, A38.
Stoppers, Beer, M52, U4, U10, C6, G22.
Stoppers, Suction, E22, M50, M52, U4, U10, C6, W26, G22, C18.
Straps, Deckle, B42, R20, S68, U4, U10, C6, D38, G22.
Straps, Loom, Balata, M24.
Stripping, Weather, B42, C40, F20, M50, M52, Q4, R18, U4, U10, C6, D38, G22.
Strips, Casket, U10, C40.
Strips, Sash, B42, B72, C40, F20, M50, R18, U4, U10, C6, G22.
Submarine Diving Apparatus, B42, U10, C6, G22.
Sugar Factories Specialties, B42, B72, C40, C54, E22, G50, H8, M52, P20, R18, S50, S68, U10, C6, M82, W10, G22.
Tanks, Acid, Rubber Lined, R42.
Tape, Friction, B22, B50, C40, E22, F22, M52, M66, M42, R20, S68, U10, C6, D38, S54.
Tape, Splicing, B22, B50, C54, E22, M52, M66, M42, R20, S68, U10, C6, D38, S54, G22.
Thread, Rubber, F2, R20, U10, C6, G22.
Tiling, B72, G50, M50, T20, R18, U4, U10, V12, C6, D38, G22.
Tips, Cane, C40, D6, F14, F20, F32, M50, M52, Q4, T16, U10, C6, G22, C18, A38.
Tips, Chair, C40, D6, F14, F20, F32, M50, M52, Q2, Q4, R18, T16, U10, C6, D38, G22, C18, A38.
Tips, Crutch, C40, D6, F14, F20, F32, M50, M52, Q2, Q4, R18, T16, U10, C6, G22, C18, A38.
Tips, Mess Table, C18.
Tissue, Gutta Percha, U10.
Toys, D6, F14, M52, S60, U10, C6, G22.
Treads, Stair, B42, B50, C40, C54, E26, F20, G50, H8, M50, M52, M28, Q2, Q4, R18, U10, V12, C6, D38, G22, A38.
Tubes, Grain Drill, B42, C40, G30, G50, M52, U4, U10, C6, G22.
Tubes, Linotype, U10.
Tubing, B42, B50, B72, C40, C54, C64, D2, D6, E22, E26, E32, F14, F20, F36, G30, G33, G50, H8, I12, M50, M52, M66, N28, Q2, Q4, R18, R20, S68, T6, T16, U4, U10, V12, V22, W42, C6, D38, G22, C18.
Tubing, Braided, B42, C40, E20, E26, H8, M50, M52, S68, T6, U10, W42, C6, D38, G22.
Tubing, Cloth Inserted, B42, B50, C40, C54, D40, E22, E26, E32, G30, G50, H8, M50, M52, N28, P20, Q4, R20, S68, T6, U10, V12, W42, C6, D38, G22.
Tubing, Gas Lamp Connection, C40, C54, D40, E26, E32, F20, G30, H8, M52, Q4, R18, S68, T6, U10, C6, D38, G22, A38.
Tubing, Invalid Chair, B50, E26, F20, H8, R18, U10, C6, D38, G22.
Tubing, Pure Rubber, B42, B50, B72, C40, C54, D6, D40, E20, E22, E26, E32, F2, F14, F20, F36, G30, G50, H8, M52, M66, Q2, Q4, R18, R20, S68, T6, T16, U4, U10, V12, W42, C6, D38, W10, G22, C18.
Tubing, Syringe, B50, B2, B6, E26, F14, F20, F36, G33, G50, H8, M52, M66, Q2, Q4, S68, T6, T16, U4, U10, C6, D38, W10, G22, C18, A34.
Typewriter Platens and Specialties, B42, B50, B72, G50, R18, S50, U10, V12, C6, D38, G22.
Valves, Bibb, U10, C18.
Valves, Hydraulic, B42, C40, F20, G50, M52, N28, P20, Q4, R20, S50, S68, T6, U4, U10, V6, W42, C6, D38, W10, G22.
Valves, Pillow, B42, C64, F20, M52, P20, Q4, S50, S68, T6, U4, U10, V6, C6, G22, C18.
Valves, Pump, A58, B42, B72, C40, C54, C64, E22, E26, E32, F20, G30, G50, H8, J10, M52, N28, P20, Q4, R18, R20, S50, S68, T6, U4, U10, V6, V12, W42, C6, D38, P52, W26, G22, C18, A38.
Valves, Pump, Balata, M24.
Valves, Reducing, B42, F20, G50, P20, Q4, S68, T6, U4, U10, V6, C6, D38, P52, G22.
Vents, Beer, M50, M52, Q4, S50, S68, U10, C6, G22, C18.
Washers, Air Brake, B42, C40, C54, E22, F20, G30, G50, H8, M50, M52, P20, Q4, R18, S50, S68, T6, U4, U10, C6, D38, P52, W26, G22, C18, A38.
Washers, Beer Pump, B42, C40, C54, F20, G50, M52, Q4, R18, S50, S68, T6, U4, U10, C6, D38, W10, G22.
Washers, Bibb, B24, B42, C40, C54, E22, M42, M50, M52, P20, Q4, S50, S68, U4, U10, V22, C6, D38, W10, G22, C18.
Washers, Bottle Stopper, B42, B72, C40, C54, C64, F14, F20, G50, M50, M52, Q4, S68, U4, U10, C6, D, 38, P52, W10, G22.
Washers, Bunghole, B42, B72, C54, F20, G50, M50, M52, R18, S50, S68, T6, U4 U10, C6, P52, W26, W10, G22, C18.
Washers, Cone, B42, C54, M50, M52, S68, U4, U10, V12, C6, W10, G22, C18.
Washers, Disc, B42, C54, E32, M50, M52, Q4, S68, U4, U10, V12, C6, W10, G22, C18.
Washers, Filter, B42, C54, C64, E22, E32, F20, M50, R18, T6, U4, U10, C6, W10, G22.
Washers, Gauge Glass, A58, B42, B72, C40, C54, E22, F20, G30, G50, H8, I12, M50, M52, N28, P20, Q4, R18, R20, S68, T6, U4, U10, V12, C6, D38, W26, W10, G22, C18, A38.
Washers, Hose, A58, B42, B50, B72, C40, C54, C64, E22, E26, F20, G30, G38, G50, H8, I12, M50, M52, N28, Q2, Q4, R18, R20, S68, T6, U4, U10, V12, W42, C6, D38, W10, G22, C18.
Washers, Seat Hinge, B42, C54, E26, I12, M50, M52, T6, U4, U10, C6, W10, G22, C18.
Washers, Slip Joint, B42, C54, E22, K50, I12, M50, M52, T6, U4, U10, V12, C6, D38, W10, G22, C18.
Washers, Spud, B42, C54, E22, E26, G50, M50, M52, S50, T6, U4, U10, C6, D38, W10, G22, C18.
Washers, Stuffing Box, B42, B72, C40, E22, G38, H8, M50, R18, R20, S50, T6, U4, U10, V12, C6, W10, G22, C18.
Washers, Syphon, B42, E22, E26, F20, G50, M50, M52, Q4, T6, U4, U10, C6, W26, W10, G22, C18.
Washers, Syphon Valve, B42, E22, F20, M50, M52, U4, U10, C6, W26, W10, G22, C18.
Washers, Top Bibb, B42, C40, E22, M50, M52, S68, U4, U10, C6, W10, G22, C18.
Washers, Union, B42, C54, C64, E22, E26, G50, H8, I12, M50, M52, Q4, R18, S68, T6, U4, U10, C6, W10, G22, C18.
Washers, Waste, B42, E22, I13, M50, M52, S68, T6, U4, U10, C6, G22, C18.
Wheels, Brewers, U10.
Wheels, Vulcanite Emery, B42, M50, U10, C6, W10, G22.
Wicking, U10.

Druggists' Sundries

Air Goods, D6, F14, G33, H40, M52, U10, A83, C6, G22.
Aprons, Laboratory, U10, G22, W22.
Aprons, Sanitary, A88, B66, G33, K12, M66, U10, C6, M38, G22, B42.
Aprons, Surgical, A88, D6, G33, H40, K12, U10, C6, G22.
Aprons, Tension, B42.
Aprons, X-Ray, U10.
Atomizers, D6, G33, M52, T16, U10, C6, G22, A34.
Bags, Face, C22, D6, F14, G33, G36, H40, M52, M66, T16, U10, C6, G22, P10.
Bags, Gas, B66, D6, H40, M66, U10, C6, D38, G22.
Bags, Gas Main, D6, H40, M66, U10, C6, G22.
Bags, Injector, D6, M66, U10, C6, G22.
Bags, Ice, B66, C22, D2, F14, G33, G36, H40, L14, M52, T16, U10, C6, G22.
Bags, Sponge, A88, G22, F14.
Bags, Syringe, C22, D2, D6, F14, G33, G36, H40, M52, M66, T14, T16, U10, C6, G22, P10.
Bags, Throat, D2, D6, F14, G33, H40, M52, U10, C6, G22, P10.
Bags, Water, U10, F14.
Balloons, Toy, D6, F14, G46, M66, S60, U10, W14, C6.
Balloons, Toy Advertising, D6, F14, G46, M66, S60, U10, W14, C6.
Bandages, Surgical, D6, G33, H40, T16, U10, C6, G22.
Bands, Chin, D6, F14, M66, S60, U10, C6, G22.
Bands, Elastic, D6, E26, F2, G33, H40, T16, U10, C6, D38, G22.
Bands, Forehead, D6, M66, S60, U10, C6, G22.
Basins, Folding, D6, G33, H40, U10, C6, G22.
Bath Folding Tubs, D6, H40, U10.
Beds, Air, D6, G33, H40, U10, A83, G22.
Beds, Water, D6, G33, H40, U10, C6, G22.
Bibs, Rubber, W22.
Bottles, Horse Medicine, U10.
Bottles, Water, C22, D2, D6, F14, G33, G36, H40, M52, M66, T16, U10, C6, G22, P10, A34.
Bowls, Plaster, W22.
Bulbs, D2, D6, F14, G33, H40, M52, S50, T16, U10, C6, G22, C18, A38.
Bulbs, Atomizer, U10, C18, D2, F14, A34.
Bulbs, Camera, U10, F14.
Bulbs, Furnace, D2, D6, M52, S50, T16, U10, C6, G22, C18.
Bulbs, Pyrography, U10.
Bulbs, Syringe, W22.
Caps, Bathing, B66, C22, D6, F14, G33, H40, M66, U10, C6, G22, P10.
Caps, Ice or Water, C22, D2, D6, F14, G33, G36, H40, M52, M66, T16, U10, C6, G22, P10.
Catheters, D6, F14, H40, L14, M66, T16, U10, C6, G22.
Combs, U10, V24, C6, G22, A34.
Cots, Finger, C22, D6, F14, G33, H7, H40, L14, M66, S60, T16, U10, C6, G22.
Cups, Cupping, D6, U10, C6, G22.
Cups, Polishing, W22.
Curtains, Shower Bath, H40, K12, U10, C6, G22.
Cushions, Ear, C18.
Cushions, Embalming, D6, H40, U10, C6, G22.
Cushions, Heel, L30, C6, G22.
Cushions, Invalid, D2, D6, F14, G33, H40, M66, T16, U10, C6, G22, P10.
Cushions, Operating, D2, D6, F14, G33, H40, U10, C6, G22.
Dam, B66, D2, D6, G33, H40, M66, T14, T16, U10, C6, G22, W22, A34.

Indexed Buyers' Guide to Rubber Products—Continued

Druggists' Sundries—*Continued*

Dilators, D6, M66, U10, W10, G22, A34.
Discs, Polishing, W22.
Drains, D6, U10, C6, G22.
Droppers, Medicine, D6, F14, T16, U10, C6, G22.
Druggists' Specialties, D6, F14, G36, H7, H40, M66, R50, S60, T14, U10, C6, G22.
Druggists' Sundries, C22, D2, D6, F14, H7, H40, M66, R50, T14, U10, C6, G22.
Fittings, Nursing Bottle, D6, T16, U10, C6, G22.
Garments, Reducing, D6.
Gloves, Acid, C22, D6, F14, G33, H40, L14, M66, S60, U10, C6, G22, A38.
Gloves, Household, C22, D2, D6, F14, G33, H40, L14, M66, S60, U10, C6, G22.
Gloves, Pure Gum, C22, D2, D6, F14, G33, H7, H40, L14, M66, S60, U10, C6, G22.
Gloves, Surgical, C22, D2, D6, F14, G33, H7, H40, L14, M66, S60, U10, C6, G22.
Gloves, X-Ray, U10.
Gum, Bandage, B66, D6, G33, H40, T14, T16, U10, C6, G22.
Hard Rubber Goods, D6, S68, T14, T16, U10, C6, W10, G22, A38, A34.
Signatures, Orthodontic, W22.
Masks, Face, C22, D6, F14, M66, S60, U10, C6, G22.
Materials, Auto Top, B50, H40, U10, C6, G22.
Mats, H40, U10, C6, D38, G22.
Mattresses, Air, D6, G33, H40, U10, A33, C6, G22.
Mittens, Acid, C22, D6, F14, G33, H40, S60, U10, C6, G22.
Mittens, Motormen's, D6, G33, H40, S60, U10, C6.
Mittens, Tanners', C22, D6, F14, G33, H40, S60, U10, C6.
Nipples, D2, D6, F14, G46, L14, H66, R50, S50, S60, T16, U10, C6, G22.
Packing, Dental Vulcanizer, W22.
Pads, Finger, D6, F2, S60, U10, C6, G22.
Pads, Truss, D6.
Pans, Bed, D6, G33, H40, U10 C6, G22.
Pessaries, D6, F14, M66, T16, U10, C6, G22, A34.
Pipes and Fittings, Syringe, D2, D6, F14, G33, G36, H40, M66, T14, T16, U10, C6, G22, A34.
Paints, Polishing, W22.
Pouches, Colostomy, U10, C6, G22.
Pouches, Tobacco, B66, D2, D6, T16, U10, C6, G22, P10.
Props, Mouth, W22.
Protectors, Bunion, L30.
Pumps, Breast, D2, D6, F14, G33, M55, M66, T14, T16, U10, C6, G22, C18, A34.
Respirators, D6, M66, U10, C6, G22.
Rings, Nursery, D6, F2, G46, R50, U10, C6, G22.
Seats, Toilet, B68.
Sheeting, Hospital, B66, D6, G33, H40, K12, M66, U10, C6, M88, G22.
Shields, Breast, D6, F14, U10, C6, G22.
Shields Eye, C18.
Shields, Nipple, D6, F14, U10, C6, G22.
Shields, X-Ray, B72.
Silencers, Pail, D6, U10, C6, G22.
Solutions, Rubber, R34.
Sponge Rubber Goods, F16.
Sponges, F14, G33, L30, M66, U10, C6, G22, F16.
Sprays, Bath, H40, H52, U10, C6, G22.
Stalls, Finger, D6, F14, G33, H7, H40, M66, S60, U10, C6, G22.
Stalls, Thumb, D6, F14, G33, H7, H40, M66, S60, U10, C6, G22.
Stoppers, D6, F14, H40, M50, U10, C6, W10, G22, A38.
Stoppers, Laboratory, D6, F14, M50, M52, R50, U10, C6, W10, G22.
Stopples, D6, F14, H40, M52, R50, U10, C6, G22, A38.
Strips, Coffin, C40.
Strips, Separating, W22.
Syringes, Bulb, D2, D6, F14, G33, H40, M52, T14, T16, U10, C6, G22, C18, A34.
Syringes, Bulb Combination, D6, G33, H40, M52, T14, U10, C6, G22, A34.
Syringe Combination Sets, C22, D2, D6, F14, G33, G36, H40, M52, M60, U10, C6, G22, P10, A34.
Syringes, Ear, D6, F14, G33, M52, M66, T14, T16, U10, C6, G22, A34.
Syringes, Embalming, U10, A34.
Syringes, Ear and Ulcer, D2, D6, F14, G33, M52, M66, T14, T16, U10, C6, G22, C18, A34.
Syringe Fittings, D2, D6, F14, G33, G36, H40, M66, T14, T16, U10, C6, G22, A34.
Syringes, Fountain, C22, D2, D6, F14, G33, G36, H40, M52, M66, T14, T16, U10, C6, G22, P10, A34.
Syringes, Horse, U10, A34.
Syringes, Infant, D2, D6, F14, G33, H40, M52, M66, T14, T16, U10, C6, G22, A34.
Syringes, Water Bottle, C22, D2, D6, F14, G33, G36, H40, M52, M66, T14, T16, U10, C6, G22, P10, A34.
Tips, Crutch, D6, F14, M52, T16, U10, C6, G22, C18, A38.
Tourniquets, D6, H40, T16, U10, C6, G22.
Tubes, Colon, D6, F14, H40, L14, M66, T16, U10, C6, G22.
Tubes, Dental, D6, M66, U10, C6, G22.
Tubes, Irrigating, D6, H40, L14, M66, U10, C6, G22, F14.
Tubes, Nasal Feeding, D6, U10, C6, G22.
Tubes, Rectal, D6, F14, H40, L14, M66, T16, U10, C6, G22.
Tubes, Stomach, D6, F14, H40, L14, M66, T16, U10, C6, G22.
Tubes, Surgical, D6, H40, L14, M66, S60, U10, C6, G22, C18.
Tubing, B50, D2, D6, E26, F2, F14, G33, G36, H8, H40, L14, M50, M52, M66, Q2, T16, U4, U10, C6, D38, W10, G22, C18, A34.
Tubing, Gas and Air, W22.
Tubing, Orthodontic, W22.
Urinals, D6, H40, M52, T16, U10, C6, G22.

Footwear

Arctics, B18, B52, C52, F22, G33, G24, G50, H48, M72, U10, C6, G22, C66.
Boots, B18, B52, C52, F22, G33, G34, G50, H48, M72, U10, A66, C6, D38, M82, G22, C66, M82.
Boots, Firemen's, B18, B52, C52, F22, G33, G34, G50, H48, U10, C6, D38, G22.
Findings, E16, C6, G22.
Heels, B18, B50, B52, D36, E26, E32, F20, F22, F32, G10, G30, G50, L30, M52, M66, P4, S74, T2, C6, D38, P52, G22.
Overshoes, B18, B52, C52, F22, G33, G34, G50, H48, M72, U10, C6, G22, C66.
Pants, Baptismal, U10.
Pants, Wading, G33, U10, C6.
Shoes, B18, B52, C52, F22, G34, G50, H48, M72, U10, A66, C6, G22, C66, A65.
Shoes, Outing, A66, C66.
Shoes, Tennis, B18, B52, C52, G33, G34, G50, H48, U10, A66, C6, C66.
Soles, B18, B50, D36, E26, F20, F22, F32, G10, G30, G50, L30, M46, M52, M66, P4, Q2, T2, T4, U10, C6, D38, H56, P52, G22.
Soling, B50, B52, F20, F32, G10, G34, G50, M66, P4, Q2, U10, C6, D38, H56, P52, G22.

Woven Elastic Fabrics

Cord, R20, D38, G22.
Thread, R20, U10, E12, G22.
Webbing, R20, G22.
Wire, Rubber Covered, B22.

Stationers' Supplies

Bands, Elastic, D6, E26, F2, H40, T16, U10, C6, E12, G22.
Erasers, F2, R22, A38.
Pens, Fountain, A13, C58, P6, W8, G22, A34.
Sacs, Fountain Pen, E22.
Sponge Rubber, Cup, M66.
Tips, Pencil, F2.

Tires and Accessories

Aprons, Automobile, B50, G50, U10, C6, G22.
Bands, Retread, M74.
Boots, A40.
Bumpers, Automobile, A88, C32, C40, C64, D36, F20, F22, G30, G50, I12, M42, M50, M52, N28, Q4, R18, S50, T6, U4, U10, V12, V22, C6, D38, G22, A38.
Bumpers, Truck, B42, C40, C64, D36, E32, F22, G30, G50, M42, M50, M52, N28, Q4, R18, S50, T6, U4, U10, V12, D38, G22, A38.
Cement, Bicycle, V4.
Cement, Rubber, A40, B42, B66, D40, E16, E32, F14, F20, F22, F26, G10, G30, G48, G50, H48, H50, L14, B50, M66, M74, P46, S37, U2, U10, V4, V12, B56, C6, D38, H56, G22.
Covers, Retread, B56.
K12, C6, G22.
Fabrics, Auto Top, B50, E26, H40.
Fillers, Rim, D38.
Filler, Tread, V4.
Flaps, M74, C66.
Grips, Bicycle, B66, C64, F20, F22, M42, M52, Q4, R18, U10, C6, D38, G22, A38.
Gums, Repair, H56.
Hose, Auto Pump, B50, C40, C64, D40, E20, F22, G30, G50, H8, M50, M52, Q4, S68, T6, U4, U10, V12, W42, C6, G22.
Hose, Radiator, B42, C32, C40, C54, C64, D40, E20, E26, E32, F20, G30, G50, H8, I12, M42, M50, M52, N28, Q4, S68, T6, U4, U10, V12, W42, C6, D38, G22, A38.
Mats, Automobile, B42, C40, C54, E32, F20, F22, G50, H8, M42, M50, M52, N28, Q4, S68, U4, U10, C6, D38, W10, G22, A38.
Materials, Repair, D38.
Paint, Tire, D38.
Patches, A40, F40, G10, M74, B58, G22, H56, D38, K16.
Protectors, Tube, D38.
Reliners, A40, F20, G10, M74.
Repair Kits, D40, F20, F22, G10, L14, M66, S68, U10, V12, B56, C6, D38, G22, A38.
Repair Stock, A40, C64, E26, F20, F22, F26, G10, G30, G48, G50, H8, L14, M42, M66, M72, P48, S76, T6, U10, V12, B56, B58, C6, D38, K3, S8, G22, A38.
Rims, Wheel, D38, G22.
Rubbers, Pedal, C32, C64, E26, F20, F22, G50, M42, M52, R18, T6, U4, U10, C6, W10, G22, A38.
Rubbers, Windshield, D38.
Strips, Wind Shield, B50, B72, C32, C40, C64, D36, D40, E26, E32, F22, G30, G50, H8, M42, M52, R18, T6, U4, U10, V12, C6, D38, G22, A38.
Tape, Tire Repair, B50, C40, F22, F10, J10, M52, M66, N42, S68, U10, V4, C6, D38, G22.
Tires, Airless, S76, U4, U10, C6, G22.
Tires, Airplane, C64, D40, F22, G10, G50, U4, U10, C6, D38, G22.
Tires, Automobile, Pneumatic, A14, A28, A40, B8, B32, B68, C32, C54, C64, C80, D16, D32, D40, E18, E26, F20, F22, F26, G10, G16, G30, G36, G42, G48, G50, H8, H12, H24, H48, H50, I16, I12, L10, L14, M6, M16, M16, M36, M42, M64, M65, M66, M72, N16, N24, N28, P22, P48, Q4, R42, S50, S56, S76, T4, T6, T16, U4, U10, V22, W36, B4, B56, B58, C6, D38, H56, M10, M26, S8, G22, C66, P10, C75, D40, B73.
Tires, Automobiles, Cushion, F22, S76, U4, U10, C6, G22.
Tires, Baby Carriage, B8, B50, B72, C40, C64, E32, F22, G30, G48, G50, H8, I12, M52, N28, Q2, Q4, R18, S68, U4, U10, V22, C6, D38, W10, G22, A38.
Tires, Bicycle, C64, F20, F22, F26, G30, I12, L14, U4, U10, C6, D38, G22.
Tires, Carpet Sweeper, B72, C32, C40, C64, E26, G50, H8, Q4, S50, S68, T6, N4, U10, C6, D38, G22, A38.
Tires, Carriage, F22, G30, G50, U4, U10, C6, D38, G22.
Tires, Motorcycle, A40, B8, C64, D40, E2, F20, F22, F26, G30, M10, P32, P48, S76, U4, U10, B4, B58, C6, D38, M10, G22, P10.
Tires, Truck, Solid, B8, B72, C40, F22, G16, G30, G50, H48, H50, M10, P46, R42, S76, U4, U10, B58, C6, D38, M10, G22.
Tubing Tire Inflation, B42, C40, C64, D40, F22, F26, G30, G50, H8, M50, M52, Q4, R42, T6, U4, U10, V12, C6, D38, G22.
Tubes, Inner, A14, A28, A40, A68, B8, B32, B68, C32, C54, C64, C80, D16, D32, D40, E18, E26, E32, F20, F22, F26, G10, G16, G30, G36, G42, G48, G50, H8, H24, H48, H50, I16, I12, L10, L14, M10, M16, M36, M42, M64, M65, M66, M72, N16, N24, N28, P20, P28, P32, P48, Q4, S28, S50, S56, S74, S76, T4, T6, T16, U4, U10, V12, V22, W36, B56, B58, C6, D38, H56, M10, M26, S8, G22, C66, P10, C75, K16, V20.

Proofed and Coated Fabrics and Products

Air Goods, D6, G33, H40, N10, C6, G22.
Aprons, Rubber, A42, A88, B50, B66, C44, D6, G33, G50, H40, K12, M66, U10, C6, D38, M88, G22, B42.
Bags, Sleeping, A83.
Balloons, Military, A42, B62, U10, C6, G22.
Belts, Swimming, H40, U10, C6.
Bibs, Barbers, A88, B66, D6, M66, U10, C6.
Blankets, Army, A42, B62, C36, C44, F36, G33, G50, H40, K12, U10, C6, D38, G22.
Blankets Camp, A42, B66, C36, C44, F36, G33, G50, H40, K12, U10, C6, D38, G22.
Blankets, Horse, A42, C44, H40, K12, U10, C6, D38, M88, G22.
Capes, Rain, F36, A42, C36, C44, H40, K12, U10, C6, G22.
Cloth, Airplane, A42, B62, H40, K12, U10, C6, G22.
Cloth Backing, C44.
Cloth, Bellows, A42, A88, B50, B66, C36, C44, G50, H40, K12, U10, C6, G22.
Cloth Camera, C36, C44, H40, U10, C6, G22.
Cloth, Carriage, A42, B50, C44, H40, U10, C6, D38, G22.
Cloth, Rubber, A42, B50, B62, B66, C36, C44, F36, H40, K12, S37, U10, C6, M88, G22.
Cloth, Shoe Covering, C44, M88.
Cloth, Stay, C44.
Cloth X-Ray, U10, G22.
Clothing, Rubber, A42, C36, C44, F36, G33, H40, K12, M46, U10, A66, M88, G22.
Coats Firemen's, A42, C36, C44, F36, G33, H40, K12, U10, C6, G22.
Collars, Swimming, C44, G33, H40, U10, C6, G22.
Covers, Merchandise, F36.
Curtains, Bath, A88, B66, F36, H40, U10, C6, G22.

Cushions, D6, F14, H40, U10, A83, C6, G22.
Diapers, A88, B66, D6, H40, M66, U10, C6, G22.
Diving Apparatus, H40, U10, C6, G22.
Fabrics, Auto Top, A42, A88, B50, B62, H40, K12, U10, C6.
Fabrics Coated and Proofed, A40, A42, A88, B50, B62, H40, K12, S37,, U10, C6, D38, M88, G22.
Fabrics, Elastic, H40, U10, C6.
Fabrics, Proofed, A42, A88, B62, F36, H40, K12, U10, C6, D38, G22.
Fibre, Toplifting, Q2.
Gloves, Driving, U10.
Innersoles, Gum, Canvas Coated, C44.
Leggins, G33, H40, A42, U10, C6.
Life-Preservers, A42, D6, G33, H40, U10, A83, C6, G22.
Mackintoshes, A42, B62, F36, G33, H40, K12, U10, C6, G22, B42.
Material, Leggings, U10.
Pillows, Army Camp, D6.
Ponchos, A42, A88, B50, B62, F36, G33, K12, U10, C6, G22.
Raincoats, Cravenette, A42.
Sheeting, Hospital, A88, B50, B66, D6, F36, G33, K12, U10, C6, D38, M88, G22.
Shields, Dress, B66, C6, M88.

Electrical Goods

Automobile Wire and Cables, B22, H26, N42, R26.
Bushings, Lamp Socket, J10, N42, G22.
Cables, Aerial, A84, B22, D20, E19, I12, N42, S2, G22, H26.
Cables, Armored, A84, B22, E19, I12, N42, S2, G22, H26.
Cables, Insulated, A84, B22, B52, D20, E19, I12, N42, P36, R26, S2, G22, H26.
Cables, Lead Coated, A84, E19, I12, N42, S2, G22, H26.
Cables, Rubber Covered, B22, H26.
Cables, Submarine, A84, D20, E19, I12, N42, S2, G22, H26.
Cables, Underground, A84, D20, E19, I12, N42, S2, G22, H26.
Couplings, Flexible Insulated, R42.
Gloves, Electricians, F14, G33, N42, S60, C6, G22.
Hard Rubber, Electrical, J10, N42, S68, T14, V24, D38, G22, A38, A34.
Insulating Material, D20, J10, L12, M52, N42, R42, T14, V22, G22, A38, A34.
Jars, Battery, B68.
Mittens, Electricians', C22.
Pliers, Insulated, J10, N42, R42, S68, V22, A34, A38.
Screw Drivers, Insulated, J10, N42, R42, S68, G22.
Sleeves, Electricians', C22.
Splicing Compounds, B22, B50, J10, N28, N42, S2, S68, C6, D38, G22.
Stools, Electricians', C22.
Tape, Electrical, B22, B50, E22, J10, M52, N42, S2, S68, C6, D38.
Wire, Armored, A84, B22, D20, I12, N42, S2, G22, H26.
Wire, Insulated, A4, A8, A84, B22, B52, D20, I12, N42, P36, R26, S2, G22, H26.
Wire, Lead Covered, A84, I12, N42, S2, G22, H26.
Wrappings, Cable Insulated, B50.

Sporting Goods

Bags, Punching, D6, S38, U10, C6, G22, P10.
Balloons, Toy, M89.
Balls, Basket, M89.
Balls, Bat, F14, S38, U10, C6, G22.
Balls, Bowling, B72, B68, A34.
Balls, Foot, H40, S38, U10, C6, G22, M89.
Balls, Golf, S38, S42, U10, D38, G22.
Balls, Hand, U10.
Balls Inflated, F14, S38, U10, C6, G22.
Balls, Play, G46.
Balls, Polo, U10.
Balls, Rubber, D38, G22.
Balls, Solid, E32, F14, S38, U10, C6, G22.
Balls, Tennis, S38, U10, C6, G22.
Bladders, Association Ball, U10, G22.
Bladders, Basket Ball, U10, G22, M89.
Bladders, Football, D6, M66, S38, T16, U10, C6, G22, P10.
Bladders, Punching Bag, M66, G22.
Bladders, Volley, U10.
Centers, Baseball, S38, S50, T16, U10, G22.
Chips, Poker, U10, C6, G22.
Plates, Baseball Home, S38, U10, G22, A38.
Plates, Baseball Pitcher, S38, U10, G22, A38.
Protectors, Baseball Body, H40, M52, S38, T16, N10, G22.
Quoits, Rubber, E22.
Shoes, M89.
Tees, Golf, S50, U10, D38, G22.

Hard Rubber Goods

Automobile Parts, E32, N42, T14, N10, G22, A34.
Barrels, Fountain Pen, U10, G22, A34.
Bits, Pipe, T14, U10, G22, A34.
Caps, Fountain Pen, E32, U10, G22, A34.
Caps, Radiator, U10, G22, A38, A34.
Cases, Thermometer, U10, G22, A34.
Combs, A34.
Covers, Battery, U10, W10, G22, A38, A34.
Discs, Water Meter, S68, U10, G22, A34.
Ebonite, T14, U10, G22, A38, A34.
Electrical Goods, S68, T14, U10, G22, A34.
Feeds, Fountain Pen, U10, G22, A34.
Grips, Pistol, U10, G22, A34.
Handles, U10, G22, A34.
Jars, Battery, B68, N42, U10, W10, G22, A38, A34.
Parts, Battery, U10, G22, A38, A34.
Parts, Internal, U10, G22, A34.
Pipes, T16, U10, G22, A34.
Plates, Gun Butt, U10, G22, A34.
Rods, S68, U10, G22, A38, A34.
Scale, Razor, T14, U10, G22, A34.
Separators, Battery, N42, U10, G22, A34.
Sheet, N42, S68, U10, G22, A38, A34.
Specialties, Industrial, U10, W10, G22, A34.
Spiders, Steering, U10, G22, A34.
Stock, Fountain Pen, U10, G22, A34.
Stocks, Hard Rubber, W22, A34.
Syringe Fittings, D6, F14, H40, T14, T16, U10, G22, A34.
Syringes, T16, U10, G22, A34.
Tubing, H8, U10, G22, A34.
Vents, Battery, U10, G22, A38, A34.

Alphabetical List of Rubber Manufacturers

THE RUBBER AGE AND TIRE NEWS will furnish information and addresses of all companies listed below. Names of advertisers in this issue are printed in heavy face type.

A 2—A. & A. Rubber Co.
A 4—A. A. Wire Co., Inc.
A 5—Achilles Rubber Co.
A 6—Acme Rubber Mfg. Co.
A 8—Acorn Insulated Wire Co.
A 10—Advance Rubber Co.
A 12—Aetna Rubber Co.
A 13—Aiken-Lambert Co.
A 14—Ajax Rubber Co., Inc.
A 16—Akron Rubber Works.
A 18—Akron Tire Co., Inc.
A 20—Alden Rubber Co.
A 22—Allcock Mfg. Co.
A 24—Allen, W. D., Mfg. Co.
A 26—Alliance Rubber Co.
A 28—Amazon Rubber Co.
A 30—American Asbestos Co.
A 32—American Electrical Works.
A 34—American Hard Rubber Co.
A 36—American Lead Pencil Co.
A 38—American Para Rubber Co.
A 40—American Rubber & Tire Co.
A 42—American Rubber Co.
A 44—American Rubber Fabric Co.
A 46—American Rubber Mfg. Co.
A 48—American Rubber Mfg. Co. of N. J.
A 50—American Steam Packing Co.
A 52—American Steel & Wire Co.
A 54—American Tire Co.
A 56—American Tire Co.
A 58—American Wringer Co.
A 60—Anchor Packing Co.
A 62—Anderson, L. M., Co.
A 64—Anderson Rubber Works.
A 65—Apsley Rubber Co.
A 66—Archer Rubber Co.
A 68—Armstrong Rubber Co., Inc.
A 70—Asbestos Fibre Spinning Co.
A 72—Asbestos & Rubber Works of America.
A 74—Asbestos & Rubber Works of New Jersey.
A 76—Asbestos Textile Co., Inc.
A 78—Aseptic Products Co.
A 80—Ash, Claudius, Sons & Co., Ltd.
A 82—Astoria Wire Co.
A 83—Athol Mfg. Co.
A 84—Atlantic Insulated Wire & Cable Co.
A 86—Atlantic Mfg. Co.
A 88—Atlantic Rubber Co.
A 90—Atlas Auto Supply Co.
A 92—Augustine, W. B.
A 94—Avon Sole Co.

B 4—Baltimore Rubber Tire Mfg. Co., Inc.
B 6—Banigan Rubber Co.
B 8—Batavia Rubber Co.
B 10—Bauer & Black.
B 12—Baumann Rubber Co.
B 14—Bay State Insulated Wire & Cable Co.
B 16—Beacon Rubber Mfg. Co.
B 18—Beacon Falls Rubber Shoe Co.
B 20—Behrend & Rothschild.
B 22—Belden Mfg. Co.
B 24—Bell, Andrew, Estate of.
B 26—Belmont Packing & Rubber Co.
B 28—Berlin Rubber Mfg. Co.
B 30—BeSaw Tire & Rubber Co.
B 32—Bergougnan Tire Corp.
B 34—Bishop Gutta Percha Co.
B 36—Blake, Whitney Co.
B 38—Blakesley Novelty Co.
B 39—Boone Tire & Rubber Co.
B 40—Boonton Rubber Mfg. Co.
B 42—Boston Belting Co.
B 44—Boston Blacking Co.
B 46—Boston Insulated Wire & Cable Co.
B 48—Boston Rubber Shoe Co.
B 50—Boston Woven Hose and Rubber Co
B 52—Bourn Rubber Co.
B 54—Bowers Rubber Works.
B 56—Bowling Green Rubber Co.
B 58—Braender Rubber & Tire Co.
B 60—Braintree Rubber Cement Co.
B 73—Brietson Mfg. Co.
B 62—British-American Mfg. Co.
B 64—Brock, A. S., Rubber Co.
B 66—Brooklyn Shield & Rubber Co.
B 68—Brunswick - Balke - Collender Co.
B 70—Bucyrus Rubber Co.
B 72—Buffalo Weaving & Belting Co.

C 2—C. C. C. Fire Hose Co.
C 3—Cambridge Rubber Co.
C 4—Canada Wire & Cable Co., Ltd.
C 6—Canadian Consolidated Rubber Co., Ltd.
C 8—Canadian General Electric Co., Ltd.
C 10—Canadian Rubber Company of Montreal, Ltd.
C 12—Canadian Top Co., Ltd.
C 14—Cancos Mfg. Co.
C 16—Candee, L., & Co.

C 18—Canfield, H. O., Co. See Advertisement on Page 238.

C 20—Canfield Rubber Co.
C 22—Canton Rubber Co.
C 24—Carborundum Co.
C 25—Carlisle Cord Tire Co.
C 26—Carolina Puncture Proof Tubing Co.
C 28—Carr, F. S., Co.
C 30—Centaur Rubber & Tire Co., Inc.
C 32—Century Rubber Works.
C 34—Chemical Rubber Co.
C 36—Chicago Rubber Clothing Co.
C 38—Cigol, F. A., Rubber Co.
C 40—Cincinnati Rubber Mfg. Co.
C 42—Clark Rubber Mfg. Co.
C 44—Clifton Mfg. Co.
C 46—Collyer Insulated Wire Co.
C 48—Colorado Tire & Leather Co.
C 50—Columbia Tire & Rubber Co.
C 52—Columbus Rubber Co. of Montreal, Ltd.
C 54—Combination Rubber Mfg. Co.
C 56—Community Rubber Co.
C 58—Conklin Pen Mfg. Co.
C 60—Conquerer Rubber Cement Co.
C 62—Consolidated Hoof Pad Co.
C 64—Continental Rubber Works.
C 66—Converse Rubber Shoe Co.
C 68—Cortland Tire & Rubber Co.
C 70—Craig Dental Mfg. Co.
C 72—Crandall Packing Co.
C 74—Crescent Insulated Wire & Cable Co.
C 75—Crown Tire and Rubber Co.
C 76—Cummer-Dowswell, Ltd.
C 78—Cummings, G. R., & Co.
C 80—Cupples Co.
C 82—Cutten & Foster.

D 2—Davidson Rubber Co.
D 4—Davis-Fry Mfg. Co.
D 6—Davol Rubber Co.
D 8—Day, H. P. & E., Inc.
D 10—Dayton Rubber Mfg. Co.
D 12—Dealers Steam Packing Co.
D 14—Deane Plaster Co.
D 16—Delion Tire & Rubber Co.
D 18—De Silva Rubber Co., Inc.
D 20—Detroit Insulated Wire Co.
D 22—Dick, R. & J., Ltd.
D 24—Dixon, Joseph, Crucible Co.
D 26—Doherty, Eugene, Rubber Works, Inc.
D 28—Dominion Rubber Co., Ltd.
D 30—Dominion Tire Co., Ltd.
D 32—Dreadnaught Tire & Rubber Co.
D 34—Dry Climate Tire Mfg. Co.
D 36—Dryden Rubber Co.
D 38—Dunlop Tire & Rubber Goods Co., Ltd.
D 40—Dural Rubber Corp.

E 2—Eagle Pencil Co.
E 4—Eagle Rubber Co.
E 6—Eagle Rubber Cement Co.
E 8—Eastern Electric Cable Co.
E 10—Eastern Rubber Co.
E 12—Easthampton Rubber Thread Co.
E 14—East Palestine Rubber Co.
E 16—Eclipse Cement & Blacking Co.
E 18—Ehman Tire & Rubber Co.
E 19—Electric Cable Co.
E 20—Electric Hose & Rubber Co.
E 22—Elkhart Rubber Works.
E 24—Ellis Cement Co.
E 26—Empire Rubber & Tire Co.
E 28—Endura Mfg. Co.
E 30—Eudurance Tire & Rubber Co.

E 32—Essex Rubber Co., Inc. See Advertisement on Page 211.

E 34—Eureka Cement Co.
E 36—Eureka Fire Hose Mfg. Co.
E 38—Eureka Packing Co.
E 40—Eureka Rubber Mfg. Co.
E 42—Excello Raincoat Co.

F 2—Faber, A. W.
F 4—Faber, Eberhard, Rubber Co.
F 6—Fabric Fire Hose Co.
F 8—Fairfield Rubber Co.
F 10—Falls Rubber Co.
F 12—Falls Novelty Co.
F 14—Faultless Rubber Co.
F 16—Featheredge Rubber Co.

Alphabetical List of Rubber Manufacturers—Continued

F 18—Federal Asbestos Co.
F 20—Federal Rubber Co.
F 22—Firestone Tire & Rubber Co.
F 24—Fisk, Ltd.
F 26—Fisk Rubber Co. of New York.
F 28—Flexible Rubber Goods Co.
F 30—Ford Motor Co.
F 32—Foster Rubber Co.
F 34—Franche, C. E. Co.
F 36—Franklin Rubber Co.

G 2—G. & J. Tire Co.
G 4—Garlock Packing Co.
G 6—General Asbestos & Rubber Co.
G 8—General Electric Co.
G 10—General Tire & Rubber Co.
G 12—Giant Tire & Rubber Co.
G 14—Gibney Tire & Rubber Co.
G 16—Gillette Rubber Co.
G 18—Globe Rubber Co.
G 20—Globe Rubber Tire Mfg. Co.
G 22—Goodrich Rubber Co., The B. F.
G 24—Goodyear Rubber Co.
G 26—Goodyear Rubber Insulating Co.
G 28—Goodyear Tire & Rubber Co.
G 30—Goodyear Tire & Rubber Co. of Canada, Ltd.
G 32—Goodyear's India Rubber Glove Mfg. Co.
G 33—Goodyear's India Rubber Selling Co.
G 34—Goodyear's Metallic Rubber Shoe Co.
G 36—Gordon Tire & Rubber Co.
G 38—Gould Packing Co.
G 40—Granby Rubber Co., Ltd.
G 42—Great Eastern Rubber Co.
G 44—Greensburg Tire & Rubber Co.
G 46—Gregory Rubber Co.
G 48—Gryphon Tire & Rubber Co.
G 50—Gutta Percha & Rubber, Ltd.
G 52—Gutta Percha & Rubber Mfg. Co.

H 2—Habirshaw Electric Cable Co.
H 4—Hainsburg, N. H. & Co.
H 6—Hale, Alfred Rubber Co.
H 7—Halifax Rubber Co.
H 8—Hamilton Rubber Mfg. Co.
H 10—Hanover Rubber Co.
H 12—Hardman Tire & Rubber Co.
H 14—Hartford Rubber Works Co.
H 16—Hardright Co.
H 20—Hatch, Henry C.
H 22—Hauthaway & Sons, Inc.
H 24—Hawkeye Tire and Rubber Co.
H 26—Hazard Mfg. Co.
H 28—Hazen-Brown Co.
H 30—Heath, Edmund F. & Son.
H 32—Hendler, Jesse.
H 34—Hendrie, W. C. Rubber Co.
H 36—Hewitt Rubber Co.
H 40—Hodgman Rubber Co.
H 42—Hollingshead, R. M.
H 44—Holmes Packing & Supply Co.
H 46—Home Rubber Co.
H 48—Hood Rubber Co.
H 50—Hood Tire Co.
H 52—Hosmer, G. A. Co.
H 54—Howe-Baumann Balloon Co.
H 56—Howe Rubber Co.
H 58—Huntington Tire & Rubber Co.
H 60—Hygienic Rubber Works.

I 2—Ideal Rubber Co.
I 4—Imperial Belting Co.
I 6—Independent Rubber Co., Ltd.
I 8—India Rubber Co.
I 10—Indian Rubber Mfg. Co., Inc.
I 12—Indiana Rubber & Insulated Wire Co.
I 14—International Rubber Co.
I 16—International India Rubber Corp.
I 18—Invincible Tire Co.

J 2—Jackson-Eno Rubber Co.
J 4—Jenkins Rubber Co.
J 6—Johnson, Henry Co.
J 8—Johnson & Johnson.
J 10—Johns-Manville, H. W. Co.
J 12—Johns-Pratt Co.

K 2—Kansas City Rubber & Tire Co.
K 3—Kanzee Tire Co., Ltd.
K 4—Kaufman Rubber Co., Ltd.
K 6—Keasbey & Mattison Co.
K 8—Keaton Tire & Rubber Co.
K 10—Kelly-Springfield Tire Co.
K 11—Kendall Tire & Rubber Co.
K 12—Kenyon, C. Co.
K 14—Kerite Insulated Wire & Cable Co.
K 16—Keystone Rubber Mfg. Co., Inc.
K 18—Killion Rubber Co.
K 20—King Rubber Co.
K 22—Kleinert, I. B. Rubber Co.
K 24—Knight Tire & Rubber Co.
K 26—Kokomo Rubber Co.
K 28—Korber Rubber Mfg. Co.

L 2—L. & M. Rubber Co.
L 4—La Crosse Rubber Mills Co.
L 6—La Favorite Rubber Mfg. Co.
L 8—Lambertville Rubber Co.
L 9—Longwear Rubber Co.
L 10—Lancaster Tire & Rubber Co.
L 12—Laurel Company.
L 14—Lee Tire & Rubber Co.
L 16—Lion Tire & Rubber Corp.
L 18—Lincoln Rubber Co.
L 19—Longwear Rubber Co.
L 20—Lovell Mfg. Co.
L 22—Lowell Insulated Wire Co.
L 24—Lubron Co.
L 26—Luzerene Rubber Co.
L 28—Lycoming Rubber Co.
L 30—Lynn Rubber Mfg. Co

M 2—McClurg Rubber Co.
M 4—McCormick, E. J. Rubber Co.
M 6—McCreary Tire & Rubber Co.
M 8—McCue & Pierce.
M 10—McGraw Tire & Rubber Co.
M 12—McIlroy Belting & Hose Co.
M 14—McLean Tire & Rubber Co.
M 16—McNaull Tire Co.
M 18—McTernen Rubber Mfg. Co.
M 20—Maguire Rubber Co.
M 22—Manhattan Rubber Mfg. Co.
M 24—Manheim Mfg. & Belting Co.
M 26—Mansfield Tire & Rubber Co.
M 28—Maple Leaf Rubber Co.
M 30—Marathon Tire & Rubber Co.
M 32—Marathon Tire & Rubber Co., Ltd.
M 34—Marion Insulated Wire & Rubber Co.
M 36—Marion Tire & Rubber Co.
M 38—Mason Tire & Rubber Co.
M 40—Massillon Rubber Co.
M 42—Mattson Rubber Co.
M 44—Mayflower Rubber Works Co.
M 46—Meade Rubber Co.
M 48—Mechanical Fabric Co.
M 50—Mechanical Rubber Co. (Chicago).
M 52—Mechanical Rubber Co. (Cleveland).
M 54—Mercer Rubber Co.
M 56—Merchants' Rubber Co.
M 58—Metal Hose & Tubing Co.
M 62—Meyer Rubber Co.
M 64—Michelin Tire Co.
M 65—Midland Tire & Rubber Co.
M 66—Miller Rubber Co.
M 68—Miner Rubber Co., Ltd.
M 70—Minzensheimer, Dr. Her.
M 72—Mishawaka Woolen Mfg. Co.
M 74—Mohawk Rubber Co.
M 76—Montgomery Bros., Inc.
M 76—Moore, Alfred F.
M 80—Morgan & Wright.
M 82—Mulconroy Company, Inc.
M 84—Mutty, L. J. Co.
M 86—Mutual Tire & Rubber Co.
M 88—Mystic Rubber Corp.

N 2—Narragansett Rubber Co.
N 4—National Aseptic Laboratories.
N 6—National Co.
N 8—National India Rubber Co.
N 10—National Rubber & Specialties Co.
N 12—National Rubber Co.
N 14—National Rubber Mfg. Co.
N 16—National Tire & Rubber Co.
N 18—Needham Tire & Rubber Co.
N 20—Newark Rubber Co.
N 22—New Brunswick Rubber Co.
N 24—New Castle Rubber Co.
N 26—New England Cable Co.
N 28—New Jersey Car Spring & Rubber Co.
N 30—New Jersey Rubber Supply Co.
N 32—New York Belting & Packing Co.
N 34—New York Insulated Wire Co.
N 36—New York Mackintosh Co.
N 38—New York Rubber Co.
N 40—New York Shield Co.
N 42—Northern Electric Co., Ltd.
N 44—Northland Rubber Co., Inc.
N 46—Norwalk Tire & Rubber Co.

O 1—Oak Rubber Co.
O 2—O. K. Tire Co.
O 4—Okonite Co.
O 6—Olden Rubber Mfg. Co.
O 7—Old Town Rubber Co.
O 8—Oliver Rubber Mfg. Co.
O 12—Omo Mfg. Co.
O 13—O'Neil Tire and Rubber Co.
O 14—Oriental Rubber Co.

P 2—Packard Electric Co.
P 4—Panther Rubber Mfg. Co.
P 6—Parker Pen Co.
P 8—Parker, Stearns & Co.
P 10—Partridge, F. E. Rubber Co.
P 12—Pearce-Arrow Tire & Rubber Co.
P 14—Pearce Tire & Rubber Co.
P 16—Peerless Cement Co.
P 18—Peerless Insulated Wire & Cable Co.
P 20—Peerless Rubber Mfg. Co.
P 22—Peerless Tire & Rubber Co.
P 24—Pennsylvania Rubber Co.
P 26—Perfection Tire & Rubber Co.
P 28—Perfection Tube Co.
P 30—Peters Mfg. Co.
P 32—Pharis Tire & Rubber Co.
P 34—Phillips, Eugene F., Electrical Works, Ltd.
P 36—Phillips Insulated Wire Co.
P 38—Phoenix Hermetic Co.
P 40—Pike Rubber Co.
P 42—Pines Rubber Co., Inc.
P 44—Plymouth Rubber Co.
P 46—Polack Tyre & Rubber Co.
P 48—Portage Rubber Co.
P 50—Porter Rubber Co.
P 52—Portland Rubber Mills
P 54—Prenzel, A. H., Rubber Co.
P 56—Progress Rubber Co.
P 58—Progressive Rubber Co.
P 60—Puget Sound Rubber Co.

Q 2—Quabaug Rubber Co.
Q 4—Quaker City Rubber Co.
Q 6—Quality Tire & Rubber Co.
Q 8—Quinn, K. J., & Co.

R 2—Racine Auto Tire Co.
R 4—Racine Rubber Co.
R 6—Rainbow Rubber Co.
R 8—Raley Rubber Co.
R 10—Raymond & Co.
R 12—Reach, A. J., Co.
R 14—Reading Rubber Mfg. Co.
R 16—Reality Rubber Co.
R 18—Republic Rubber Co.
R 20—Revere Rubber Co.
R 22—Roberts Rubber Co., Weldon.
R 24—Roebling's, John A., Sons Co.
R 26—Rome Wire Co.
R 28—Rosenthal & Katz.
R 30—Rosenwald & Weil.
R 32—Royal Equipment Co.
R 34—Royal Rubber Cement Co.
R 36—Royal Rubber Works.
R 38—Rubber & Celluloid Harness Trimming Co.
R 40—Rubber Goods Mfg. Co.
R 42—Rubber Insulated Metals Corp.
R 44—Rubber Products Co.
R 46—Rubberset Co.
R 48—Rubber Step Mfg. Co.
R 50—Rubber Stopple Co.
R 52—Ryan Ideal Stain Blacking Co.

S 2—Safety Insulated Wire & Cable Co.
S 4—Salem Rubber Cement Co.
S 6—Salem Rubber Co.
S 7—Samson Tire & Rubber Co.
S 8—Savage Tire Corp.
S 10—Savoie Rubber Co.
S 12—Schacht Rubber Mfg. Co.
S 14—Schavoir Rubber Co.
S 16—Schaw Cone Tire Co.
S 18—Schein, S., & Sons.
S 20—Schmid-Lyon Rubber Co.
S 22—Schwarzwaelder Co.
S 23—Sciato Rubber Co.
S 24—Seabury & Johnson.
S 26—Seamless Rubber Co.
S 28—Semple Rubber Co.
S 30—Simplex Wire & Cable Co.
S 32—Smith Canvas Tread Tire Co.
S 34—Soltau, Robert, Co.
S 36—Southern Tire & Rubber Co.
S 37—Savoie Rubber Co.
S 38—Spalding, A. G., & Bros.
S 40—St. Louis Rubber Cement Co.
S 42—St. Mungo Mfg. Co. of America.
S 44—Standard Four Tire Co.
S 46—Standard Rubber & Cable Co.
S 48—Standard Tire & Rubber Co.
S 50—Standard Tire & Rubber Mfg. Co.
S 52—Standard Underground Cable Co.
S 54—Standard Woven Fabric Co.
S 56—Star Rubber Co.
S 58—Steece, Mortimer.
S 60—Sterling Rubber Co., Ltd.
S 61—Sterling Tire Corp.
S 62—Stokes, Joseph, Rubber Co.
S 64—Stoughton Rubber Co.
S 66—Stowe & Woodward Co.
S 68—Strong Rubber & Asbestos Mfg. Co.
S 70—Sun Novelty Co.
S 72—Sunset Rubber & Supply Co.
S 74—Sussex Rubber Co.
S 76—Swinehart Tire & Rubber Co.

T 2—Taunton Rubber Co.
T 4—Ten Broeck Tyre Co., Inc.
T 6—Thermoid Rubber Co.
T 8—Tilton Rubber Mfg. Co.
T 10—Toronto Rubber Co., Ltd.
T 12—Transparent Rubber Co.
T 14—Traun Rubber Co.
T 16—Tyer Rubber Co.

U 2—U-Glu Supply Corp.
U 4—United & Globe Rubber Mfg. Co.
U 6—United Shoe Machinery Co.
U 8—United States Asbestos Co.

U 10—United States Rubber Co. See Advertisement on Page 203.

U 12—United States Tire Co

V 2—Vail Rubber Co.
V 4—Van Cleef Bros.
V 6—Victor Balata & Textile Belting Co.
V 8—Victor Rubber Co.
V 10—Viscol Company.

V 12—Voorhees Rubber Mfg. Co. See Advertisement on Page 210.

V 14—Vulcalose Co.
V 16—Vulcan Asbestos Mfg. Co., Inc.
V 18—Vulcan Proofing Co.
V 20—Vulcan Rubber Co.
V 22—Vulcanized Products Co.
V 24—Vulcanized Rubber Co.

W 2—Waitt Cement Co.
W 4—Wales Goodyear Rubber Shoe Co.
W 6—Washburn & Moen Mfg. Co.
W 8—Waterman, L. E., Co.
W10—West American Rubber Co.
W12—Western Electric Co., Inc.
W14—Western Reserve Rubber Co.
W16—Western Rubber Co.
W18—Westinghouse Electric & Mfg. Co.
W20—Whitall-Tatum Co.
W22—White, S. S., Dental Mfg. Co.
W24—Whitehead Bros. Rubber Co.
W26—Williams-Bowman Rubber Co.
W28—Wilson Tire & Rubber Co.
W30—Wire & Cable Co.
W32—Wohlberg, Richard.
W34—Woodward, F. E., & Sons.
W36—Woodworth Mfg. Co.
W38—Woonsocket Rubber Co.
W40—Worthington Ball Co.
W42—Woven Steel Hose & Rubber Co.

X 2—Xenia Rubber Mfg. Co.

Y 2—Yatman Rubber Co.

Z 2—Zee Zee Rubber Co.

PARA PHENYLENE DIAMINE

THIOCARBANILIDE

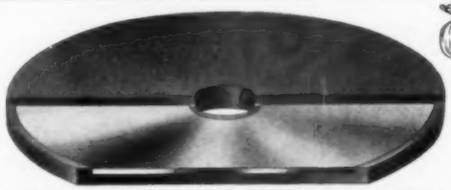
ANILINE OIL

NATIONAL ANILINE & CHEMICAL CO., Inc.

244 Madison Avenue

NEW YORK CITY

"LOOK INTO IT"



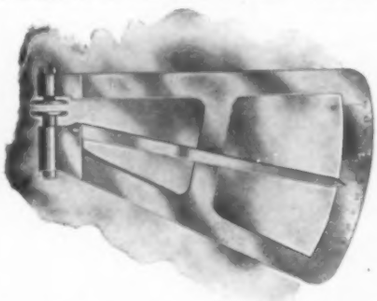
THAT STEEL CORE SETTLES VALVE TROUBLE—SAVES MONEY!

Voorhees Rub-Steel Pump Valves Are Supreme

—DEMAND THEM—

VOORHEES RUBBER MFG. CO. 18-50 Bostwick Ave. JERSEY CITY, N. J.

MEASURING GAUGES



FOR MEASURING SHEET RUBBER

HOME OF

BALL BEARING STITCHERS

AND ROLLERS FOR TIRE & SHOE MANUFACTURING

TOOLS OF QUALITY

(ESTABLISHED IN 1849)

THE HOGGSON & PETTIS MFG. CO.

NEW HAVEN, CONN., U. S. A.

THE RUBBER AGE AND TIRE NEWS

DECEMBER 10, 1917 VOL. II. NO. 6

Member of the Associated Business Papers, Inc.

INDEX TO CONTENTS

	PAGE
Testing Insulated Wires and Cables	213
Separating Rubber from Fabrics of Old Pneumatic Tires	215
Synthetic Caoutchouc	216
Information Exchange	218
Enlistments in Army and Navy	219
Editorials	220
News of Interest to the Rubber Industry	221
News from the Rubber Metropolis	222
Washington News	224
American Rubber Patents	225
Market for Manufactured Rubber Goods	226
The Fabric Market	226
Chemicals and Compounding Materials	227
The Crude Rubber Market	228
Scrap Rubber	228
Tire News:	
Building Tire Business	229
Uniformity in Tires	230
When Experts Design Windows	231
Items of Interest to the Tire Trade	232
Tires and Accessories	233

THE GARDNER, MOFFAT COMPANY, Inc., *Publishers*

120 WEST 32D STREET NEW YORK

Room 308-310 Evening Star Building, Washington D. C.

SUBSCRIPTION PRICE: ONE DOLLAR PER YEAR. SINGLE COPIES TEN CENTS. CANADA: TWO DOLLARS A YEAR. FOREIGN: THREE DOLLARS A YEAR. COPYRIGHT, 1917, BY THE GARDNER, MOFFAT COMPANY, INC., PUBLISHERS.

ISSUED ON THE TENTH AND TWENTY-FIFTH OF EACH MONTH. FORMS CLOSE FIVE DAYS PREVIOUSLY. ENTERED AS SECOND-CLASS MATTER MARCH 26, 1917, AT THE POST OFFICE AT NEW YORK, N. Y., UNDER THE ACT OF MARCH 3, 1879.

TRENTON N.J., U.S.A. **ESSEX RUBBER COMPANY, Inc.** TRENTON N.J., U.S.A.

"SHED-WET" SOLES
FIBRE-RUBBER SOLES
"ESSEX" RUBBER HEELS

MOLDED SPECIALTIES

Trade Mark

AUTOMOBILE ACCESSORIES

INNER TUBES, CEMENTS, ETC.

MOLDED RUBBER GOODS

ACCELERATORS ANTIMONY
CARBON TETRACHLORIDE
CARBON BISULPHIDE
SULPHUR CHLORIDE
ANILINE OIL
BENZOL

1890 LHBCO.

LITHARGE SULPHUR
CARBONATE MAGNESIA
CARBON AND LAMP BLACK
ULTRAMARINE BLUE
WHITING
LIME

L. H. BUTCHER COMPANY

ESTABLISHED 1890

NEW YORK LOS ANGELES SAN FRANCISCO

PORTAGE
TIRES
5000 MILES
ASK YOUR DEALER

DEC 21 1917
©CLB400025

THE
RUBBER AGE
AND TIRE NEWS

Testing Rubber Insulated Wires and Cables

Manufacturers of rubber insulated wires and cables test all of their products, not only for purposes set forth by purchasers' specifications and the National Electrical Code, but also for their own assurance as to the electrical quality of their goods. All of these manufacturers have their factories equipped with apparatus and other facilities needed for making the required physical and electrical tests. Many also have well-equipped chemical laboratories.

The testing of cable and wire insulations can be divided into three classes: electrical tests, physical tests and chemical tests.

The electrical tests are considered the most important for the reason that the value of insulations resides chiefly in their insulating qualities.

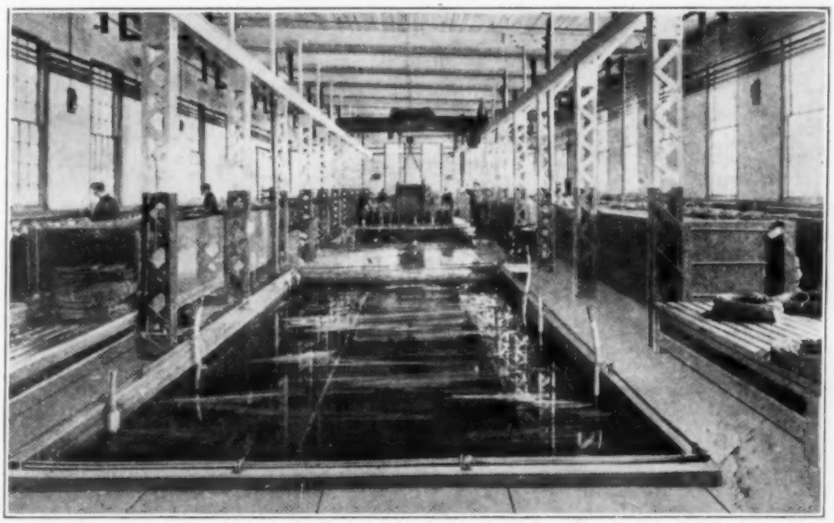
Electrical Tests

Electrical tests are made on both the wire and the insulation, and can be divided into breakdown dielectric tests, and insulation resistance and voltage tests.

The conductivity of the copper is determined by measuring the resistance of a length of the wire and comparing with Matthiessen's standard of pure copper resistance.

The voltage used in breakdown tests varies from 300 to 2,500 volts, according to the thickness of the insulations. From 1,500 to 8,000 volts are used on voltage tests, the former voltage being quite sufficient for all practical work on low voltage wire.

Breakdown tests are made on samples, while insulation resistance and voltage tests are made on the whole of each length of wire turned out by the factory.



Testing Tanks

The coils of wire, after being removed from the vulcanizer, are kept for at least 24 hours at the normal temperature of the factory storeroom before being placed in the testing bath.

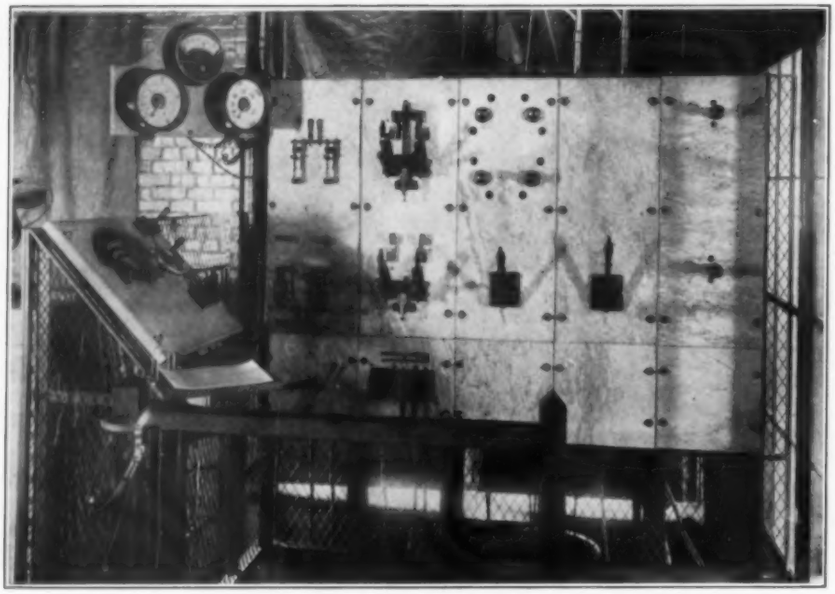
The voltage breakdown and insulation tests are made after immersing samples or coils of finished wire in water from 12 to 72 hours, or more, one side of the circuit being placed on the copper wire and the other grounded in the immersion tank. The voltage test is usually made first; then the resistance test is taken. A fairly sensitive galvanometer is used.

The test for insulation resistance has to be made on all wire after at least twelve hours submersion in water and while the wire is still immersed, results are corrected to a water temperature of 60 degrees F. Tests are made with the wire in coils suitable for examination and are made before the application of braid or other covering. A well insulated battery and galvanometer, with not less than 100 volts, are used and readings are taken after one minute's electrification. Alternating current from a generater and transformer of ample capacity is used in the voltage test.

The insulation resistance at a given temperature is reduced to that at 60 deg. F. by dividing by the coefficient corresponding to that temperature, and should indicate 100 to 1000 Megohms per mile of wire, or more according to size. Flaws are detected by sparks which jump from defective spots in the insulation and these spots are carefully noted.

After the tests, the insulation is cut away from the defective spots, which are then dried in the flame of a blow lamp. After this the naked wire is cleaned with emery cloth or a buffing wheel, and tinned. Strips of rubber are wound around the wire to build up a thickness equal to that of the rest of the insulation, friction tape and paper strips are wrapped over this and the repair is cured in a small vulcanizer designed for the purpose.

The rubber compound used for making this type of repair usually consists of 50 per cent pure crude rubber, 30 per cent of zinc oxide and 20 per cent of sulphur. After being repaired, the coil of wire is again tested.



HIGH-TENSION SWITCHBOARD IN TESTING LABORATORIES

After the tests have been completed the wire is dried in vacuum chambers.

Chemical Tests

Chemical tests concern the tin coating of the copper wire as well as the rubber insulation. The object of these tests, as far as the rubber insulation is concerned, is to determine separately the amounts of resinous matter, sulphur, mineral matter, etc., contained in the compounds. These are obtained by dissolving these ingredients in solutions which affect each one only, and after obtaining these quantities through the usual processes of filtering, drying, etc., the amount of pure rubber is arrived at through the process of elimination.

Standard specifications require, on analysis, that there be not less than 30 per cent of pure Para rubber; not more than four per cent of waxy hydrocarbons, consisting of refined paraffine or pure ozokerite; not more than seven-tenths of one per cent of free sulphur; not more than two and four-fifths per cent total sulphur; and that the compound be free from all foreign and mineral matter that might have a deleterious effect on the insulation.

The rubber extractive in the vulcanized compound should vary between the limits nine-tenths and one and thirty-five hundredths per cent. The vulcanized compound before being extracted with acetone should be reduced in size sufficiently to pass through a twenty-mesh sieve.

Tinning Test

For the tinning test, samples of wire are thoroughly cleaned with alcohol and immersed in hydrochlorie acid of a specific gravity of 1.088 for one minute. They are then rinsed in clear water and immersed in a solution of sodium sulphide of a specific gravity of 1.142 for thirty-two seconds, and again washed. This operation is repeated three times and if the sample does not become blackened after the fourth immersion, the tinning is regarded as satisfactory.

The sodium sulphide solution must contain an excess of sulphur and should have sufficient strength to thoroughly blacken a piece of clean, untinned copper wire in five seconds.

Physical Tests

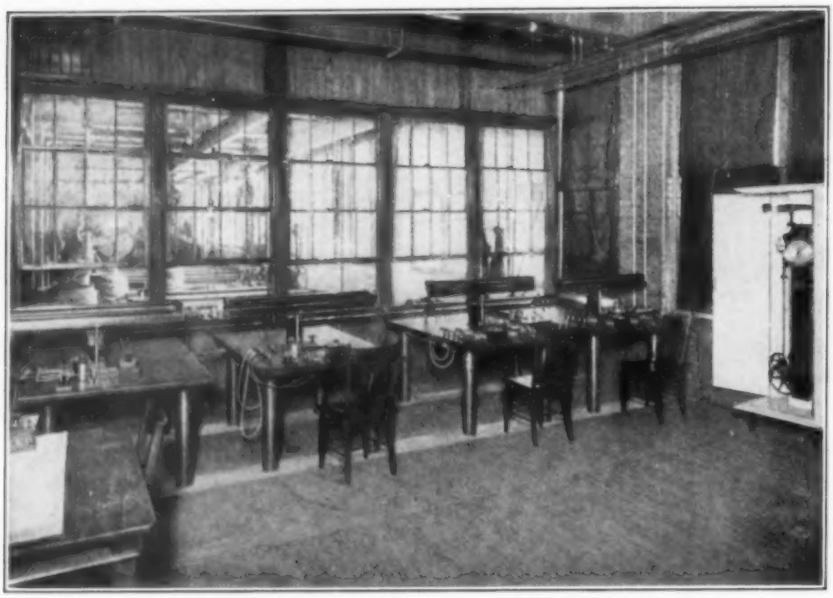
Copper conductors, their rubber insulation and braiding are subjected to physical tests. Each solid conductor must stand an elongation of 25 per cent of its length in ten inches before breaking and must be capable of being wrapped six times about its diameter without showing signs of breakage.

For the braided covering which protects the rubber insulation of many types of wires and cables, the physical test is the following: A six-inch sample of wire with carefully paraffined ends is submerged in fresh water of a temperature of 70 degs. F. for a period of 24 hours. The difference in weight of the sample before and after submersion must not be more than ten per cent of the weight of the copper and vulcanized rubber.

Physical tests of rubber insulations are made by introducing samples of compound into the jaws of a testing machine and stretching the rubber to determine elasticity and strength.

Marks are placed upon a sample of vulcanized rubber insulation four inches long, with the marks two inches apart. The sample is placed in the testing machine and stretched at the rate of three inches per minute until the marks are six inches apart and then released. One minute after such release the marks should not be over two and seven-sixteenths inches apart. The same sample is again stretched and should not break before the marks are nine inches apart.

The tensile strength of a rubber insulation as shown by the tests made on a carefully prepared sample should not be less than 1200 pounds per square inch. The sample, for five minutes before, and as near as practicable during the test, should be maintained at a temperature of 70 degs. F. The test to determine



SECTION OF LABORATORY IN INSULATED WIRE FACTORY

the tensile strength of an insulation should be made on as perfect a piece of vulcanized insulation as it is practicable to obtain from the wire being tested.

Packing for Shipment

Rubber insulated wire is shipped in reels or in coils as directed by the purchaser. If shipped in reels, these must be amply strong and the wire protected by lagging to prevent injury in transportation. A tag must be placed inside the lagging and a stencil on the outside of each reel, giving the weight, the length of each piece of wire, the size of the wire, the name of the manufacturer and the purchaser's order or inspection number plainly marked.

If shipped in coils, each coil should be securely bound with a heavy layer of wrapping paper and with an outside wrapping of burlap, with each turn of burlap overlapping the other one-half its width.

Shipping Department in a Large Factory

Each coil must have the weight, length and size of wire, the name of manufacturer and purchaser's order or inspection number plainly and indelibly marked on two strong tags. One of these tags must be attached to the coil inside the burlap and the other to the coil outside the burlap.

Separating Rubber from Fabrics of Old Pneumatic Tires*

A new process for separating the rubber from the fabrics of worn out tire casings has been perfected by H. Debauge, a well-known French rubber chemist, and as it is claimed to make possible the complete recovery of the rubber without destroying the fabric it is of considerable commercial value.

It is known that very powerful agitation, aided by heat, causes vulcanized rubber to dissolve in a suitable solvent. Mr. Debauge has devised an apparatus in which very powerful agitation is produced for this purpose by means of pallets revolving at a speed of 300 to 500 revolutions per minute.

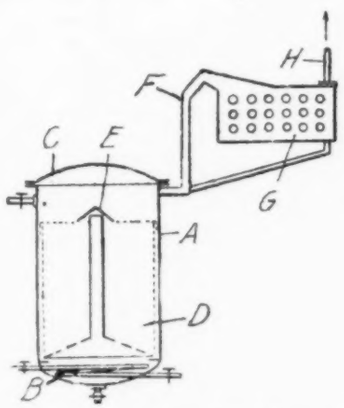
In the Debauge process the tire fabric is treated with xylol or other solvents of vulcanized rubber, at a temperature of 100 to 110 deg. C. in a vacuum accompanied by a circulatory movement of the liquid produced by a cone and tube device analogous to that used in some laundry boilers.

Apparatus suitable for carrying out the process is shown in the accompanying illustration, and comprises an autoclave at *A*, at the bottom of which is arranged a coil *B* for heating by steam. The heating can also be effected by means of a jacket, or any other heating device.

Inside the autoclave, which is closed by a removable cover *C*, there is a removable cage *D*, provided at the top and centrally with a cone *E* placed over a vertical pipe. The fabrics to be vulcanized are placed in the cage *D*, after having previously been washed in the manner hereinafter described.

The upper part of the autoclave communicates by means of pipe *F* with a reflex cooler *G*, which returns to the autoclave the liquid produced by the condensation of the vapors. A pipe *H* connects the cooler to a vacuum pump and the apparatus is provided with a pressure gauge, a thermometer and a safety valve.

When xylol is used as a solvent, the mode of operation is as follows: After the preliminary stripping of the rubber from the tire fabric, for which xylol is also used, the fabric is placed in an ordinary centrifugal washer containing cold xylol, which removes all the remaining rubber particles, and also the resins and free sulphur of the rubber.



Apparatus Used in Debauge Process

The xylol used for this operation may after having been filtered be used again with advantage for removing the particles of rubber in suspension in the solution.

After the centrifugal treatment the fabric is placed in the cage (4), and the latter is placed in the autoclave (1), containing pure xylol. A vacuum is produced in the autoclave and the same is heated to about 110 deg. C., which produces violent ebullition.

When this operation is completed the autoclave is emptied and a second operation identical with the first is begun. The fabric is then washed with clean xylol.

Though all these liquids used contain rubber in solution, they may be used for dissolving the granular rubber remaining from stripping the fabric by machinery specially designed for this purpose.

The several operations remove nearly all the rubber from the fabric, but to make the separation complete a fresh quantity of xylol is introduced into the autoclave, and the pressure is raised to about 2 kilos per square centimeter and there maintained for some time.

When the operation is finished, the fabric is returned to the washing machine and is washed and centrifugally treated in xylol or other solvent of vulcanized rubber, and then dried by a current of inert hot gas.

If it is desired to have the fabric very white, it is passed through a bleaching bath. The fact that the bleaching is performed without difficulty shows that the de-rubberizing of the fabric is complete.

It is said that the process may be applied with any other solvent of vulcanized rubber, the temperatures and pressures varying according to the nature of the solvent used.

* From *India Rubber Journal.*

Technical Course in Rubber Manufacture*

By H. E. Simmons, M.S.

Professor of Chemistry in the Municipal University of Akron

Copyright, 1917, by The Gardner, Moffat Co., Inc.

SECTION XI

Synthetic Caoutchouc

The question of being able to produce artificial rubber is one that has interested a great many workmen and especially has it been of great interest to the laymen of the rubber industry. I once heard the superintendent of a large rubber factory say, when asked his opinion as to the possibility of synthetic rubber, that he expected to see "synthetic apples" first.

Several years ago, certain men and in fact we might say certain nations began to appreciate the fact that the time was approaching when the amount of wild rubber then being produced would not be sufficient to supply the world's demands. To meet this condition, Mons. E. Coustet proposed three solutions:

First, he said we must use the mineral caoutchouc which had been discovered in the Castleton mines, England, in 1785, and later in France in 1816, and still later in the United States.

Second, we must employ an artificial product possessing the properties of the natural product. In 1846, Sace and Jonas produced such a substance by treating linseed oil with azotic acid. Another similar substance had been produced by treating oil of turpentine with sulphuric acid.

The third suggestion was to increas the supply of natural product, but this seemed like a very slow method.

The first of these suggestions has been utilized and in addition to these mineral rubbers we are using today large quantities of synthetic rubber.

The third way of course has proved the method which has largely solved our problem to date, for the natural product has been increased both by obtaining more of the wild rubber and by the great development of plantations.

The second idea, that of artificial rubber, however, still remains the dream of the chemist. It is not a question of merely producing it, for that has been accomplished, but of producing it upon a commercial basis.

How great the demand has been for the artificial product is reflected in the following statement found in the *Independent* (Sept. 13, 1906, 61:648-9): "If any ambitious young man would like to earn $10,000,000 next year he has the chance. The world will gladly pay him that, or even more if he will show how to make India rubber cheaply. He will find much of the preliminary work already done; only one link is lacking in the chemical process. All he has to do is to reverse a well known chemical reaction. Any freshman chemist can do it—on paper. This is all there is to it:

$$2C_5H_8 \longrightarrow C_{10}H_{16}$$

We know that isoprene results from the distillation of caoutchouc. In 1860, Greville Williams isolated isoprene with the apparent formula of C_5H_8 (*Proc. Roy Soc.* 1860, 10, 516); therefore, the above is possible and has been accomplished, but not on a commercial basis. Bouchardat in 1875 (*Compt. rend.* 1875, 80, 1446) had observed that some of the distillation products of caoutchouc could be changed into rubber when treated with hydrochloric acid in the cold. This substance was undoubtedly isoprene. He also called attention to a polymer of this having the formula $C_{10}H_{16}$.

Isoprene may be made from turpentine. In 1882, Sir William Tilden (*Trans. Chem. Soc.* 1884, 45, 411), observed that isoprene could be made from turpenes (substances obtained from oil of turpentine). He also observed that this isoprene upon long standing polymerized into rubber. Attempts were than made to hasten this reaction. Tilden made his isoprene by passing oil of turpentine through pipes heated to a red glow. If the isoprene may be cheaply converted into caoutchouc, then the raw rubber industry may be transferred from the rubber tree of the tropics to the pine trees of our own country.

A British patent of 1907, proposed by Heinemann, describes the process of making synthetic rubber by heating a mixture of acetylene and ethylene at a dull red heat and there results divinyl,

$$CH_2 = CH \cdot CH = CH_2$$

then by the ordinary reaction using methylchloride, this is converted into methyl divinyl, or isoprene,

$$CH_2 = C \cdot CH_3 \cdot CH = CH_2$$

Again the isoprene is made to polymerize into caoutchous.

There was a time when the "synthetic rubber scare" nearly produced a panic in the rubber plantation securities. This furnishes evidence of the almost unreasonable fluctuation of a stock market.

Harries in 1905 had established, he thought, the chemical constitution of caoutchouc to be 1.5 dimethylcyclooctadiene and this aided the problem of building up the synthetic product (*Ber.* 1904, vol. 37, p. 2708; 1905, vol. 38, p. 1195).

In 1910, Harries reported in a lecture given in Vienna that he had succeeded in converting isoprene into caoutchouc by heating it in sealed tubes in the presence of glacial actetic acid, and he deserves the credit of being the first man to publish a method for this which could be repeated by another investigator. Harries, in 1911, found that isoprene in the presence of metallic sodium polymerized very rapidly, but that the product was different than the one obtained where heat was used. (*Annalen*, 1911, vol. 383, p. 188).

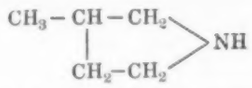
In 1884, Tilden also suggested that it was possible to polymerize the homologues of isoprene and in so doing to obtain substances varying from resinous bodies up to those possessing the properties of rubber. This of course suggested new materials as starting products in the procuring of synthetic caoutchouc.

O. Wallach (*Annalen*, 1884, 225, 311; 1885, 227, 292; 1887, 238, 88) studied the behavior of isoprene and did succeed in polymerizing it by means of the action of light.

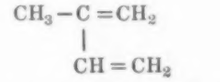
Weber repeated the work of Tilden and reports that he obtained 211 grams of caoutchouc from 300 grams of isoprene, after keeping it for nine months.

In all this work, it will be observed that the isoprene has been obtained from some other natural source, but in 1897 Euler was able to synthesize this substance. (*Ber.* 1897, 30, 1989; *J. Prakt. Chem.* 1898, 57, 131). He began with β-methyl pyrrolidine

* This course commenced in the July 10 1917 issue of THE RUBBER AGE AND TIRE NEWS and will be complete in 28 issues.



and by successive treatment with CH_3I and KOH was able to produce isoprene:



It is apparent, therefore, that the product which results depends upon the method used and also upon the material used in starting, as is shown by the statements of Holt in *Z. angew. Chem.* 1914, vol. 27, p. 153.

Caoutchoucs from Butadiene C_4H_6

Normal caoutchouc: (by heating), easily soluble, elastic, vulcanizable.

Carbon dioxide caoutchouc: Insoluble, does not swell up, moderately elastic, unvulcanizable.

Sodium caoutchouc: Easily soluble, elastic, vulcanizable.

Caoutchoucs from Isoprene, C_5H_8

Normal caoutchouc: Easily soluble, elastic, vulcanizable.

Carbon dioxide caoutchouc: Insoluble, does not swell up, elastic, vulcanizable.

Sodium caoutchouc: Easily soluble, not elastic, difficultly and incompletely vulcanizable.

Caoutchoucs from Dimethylbutadiene, C_6H_{10}

Normal caoutchouc: Easily soluble, not elastic, can only be vulcanized to hard rubber.

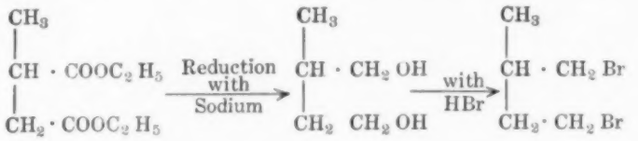
Carbon dioxide caoutchouc: Insoluble, does not swell up, not elastic, difficultly vulcanizable, easily oxidizable.

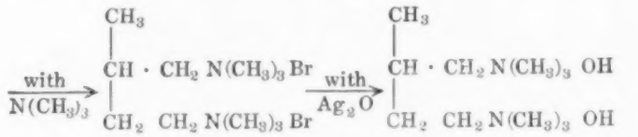
Sodium caoutchouc: Soluble and insoluble modifications, not elastic, unvulcanizable.

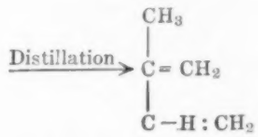
From the above table, it may be seen that by properly choosing the material to start with, and by use of the proper process of polymerization, it is possible to obtain caoutchouc with entirely different properties. This has a suggestion in it of technical importance for it points out the fact that some day we may be able to produce and emphasize any particular property that is desired.

The first thing to be accomplished is the production of isoprene or its homologues, then a method of polymerizing these substances. Both of these processes must be such as can be worked on a commercial basis and must produce a final product with chemical and physical properties analogous to the native rubber and at a cost to compete with the native rubber.

We shall now consider different means of producing isoprene. It was noted above that Tilden obtained about a five per cent yield of isoprene from turpentine, but even though a good yield could be obtained, the supply of turpentine is very variable and uncertain. Several men have carried out valuable investigations along this line. Neresheimer (*Inaug. Dissert. Kiel*, 1911, began with the diethyl ester of pyrotartaric acid, which he reduced by means of sodium and then the following steps as indicated here:





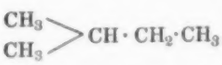


This method has the great advantage of producing a pure product. Matthews and Strange (*English Pat.* 4189, 1910) worked out a different method starting with isopentane,

first converting it into the dihalogen compound,

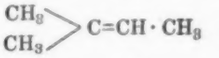
From this the halogen acid is then removed and isoprene results:

Then later we find another process beginning with the same substance when the Badischer Anilin und Soda Fabrik (*Fren. Pat.* 43512, 1911) obtained isoprene by the following steps:

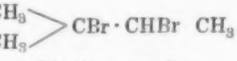


is converted into the monohalogen,

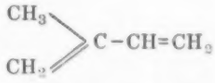
this when treated with lime yields



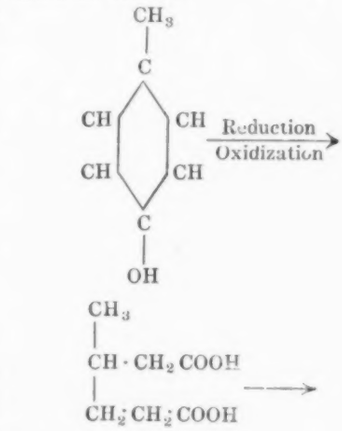
trimethylethylene. This is then converted into the dihalogen derivative,

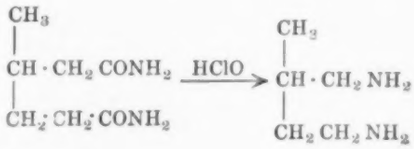


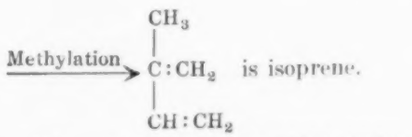
and when this is passed over a catalytic agent under reduced pressure at a temperature of 350 deg., isoprene results,



The Bayer Co. next produced isoprene beginning with a coal tar product. They used p-cresol which is first reduced and then oxidized and this treatment will break the ring structure. The steps are indicated as follows:







Heinemann (*Eng. Pat.*13252, 1908) proposed that by the hydrolysis of starch, then oxidization and treatment with phosphorus trisulphide, there would result methylthiophene which upon reduction would give

isoprene. This is the method which gained wide newspaper publicity for it suggests the production of auto tires out of potatoes.

Harries (*Annalen*, 1911, 383, 157) worked out a method starting with alcohol, the necessary steps of which method are indicated here:

$$CH_3\,CH_2\,OH \longrightarrow CH_3\,COOH \longrightarrow CH_3\,COCH_3$$
$$\longrightarrow (CH_3)_2 \cdot C\,(C_2H_5)\,OH \longrightarrow CH_3 \cdot CH{:}C{:}(CH_3)_2$$
$$\longrightarrow CH_3\,CHBr\,CBr\,(CH_3)_2 \longrightarrow CH_2{:}CH{-}C\begin{matrix}CH_3\\ \| \\ CH_2\end{matrix}$$

This method becomes a possibility inasmuch as commercial alcohol is now available. It is claimed for this process that it will yield from 60 to 75 per cent pure isoprene.

Matthews and Strange (*Eng. Pat.* 4572, 1910) then carried out some work with the amyl alcohols, both the iso and active, found in fusel oil. By carefully chlorinating these substances, passing the products over soda lime heated to 470 deg. and then fractionating, they claimed to have obtained a forty per cent yield of isoprene.

This constitutes a brief survey of the attempts which have been made to produce isoprene, the substance which by polymerization we are able to convert into caoutchouc.

Next in order, therefore, we must consider the ways which we have for effecting this latter change.

Some of these have already been mentioned, for example, its treatment with acid, autopolymerization, light, etc., all of these processes being slow and producing uncertain results. It was to hasten this process that heating in sealed tubes was tried and then treatment with acetic acid. From the use of these substances to accelerate the change, we find almost every class of compounds, both organic and inorganic, being used, even down to the Röentgen rays.

The caoutchoucs prepared by the above reagents will respond to tests, which Harries laid down for a true caoutchouc and thus these are called "normal caoutchoucs."

Then Harries and Matthews independently found that sodium or even amalgams, either hot or cold, would polymerize isoprene either in the cold or with a little heat, and effect this change almost quantitatively. This final product does not yield the same ozonide as the normal caoutchouc, indicating that it must possess a different constitution. As stated in the beginning, Tilden suggested that it was possible to produce caoutchouc from the homologues of isoprene; also, therefore, we shall discuss briefly the one most commonly used and the one which has given the best results, namely, Butadiene. Harries started with ethylmethylketone and reduced it to sec-butyl alcohol, which may be dehydrated, then by producing the dibromide and treating this with soda lime, butadiene results.

Hexahydrophenol has been converted into butadiene by heating it to a temperature of 600 deg. C.

It was observed by Ehrlich in 1905 that the addition of amino acids would increase the production of higher alcohols in fusel oil during fermentation. With this idea,, Fernbach and Strange worked out a cheap method of producing butyl alcohol and acetone. This alcohol is then converted into the chloride, and then by chlorination into the dichloride, which when heated with soda lime will produce butadiene,

$$\left.\begin{array}{l} CH_3\,CH_2\,CH_2\,CH_2\,OH \longrightarrow \\ CH_3\,CH_2\,CH_2\,CH_2\,Cl \longrightarrow \\ CH_3\,CH_2\,CHCl\,CH_2\,Cl \text{ or} \\ CH_3\,CHCl\,CH_2\,CH_2\,Cl \text{ or} \\ CH_2\,Cl\,CH_2\,CH_2\,CH_2\,Cl \end{array}\right\} \longrightarrow CH_2{=}CH{-}CH{=}CH_2$$

The Synthetic Products Co. succeeded in beginning with butyl aldehyde to convert it into the aldol, and this when reduced gives the 1,3-butyleneglycol; this is converted into the dichloride, and when treated with soda lime butadiene results.

$$CH_3\,CHOH\,CH_2\,CHO \longrightarrow CH_3\,CHOHCH_2\,CH_2\,OH \longrightarrow$$
$$CH_3\,CHCl\,CH_2\,CH_2Cl \longrightarrow CH_2{=}CH \cdot CH{=}CH_2$$

Butadiene

Several other methods have been used to produce this substance, and in fact several other homologues have been produced. The methods used to polymerize butadiene are similar to the ones used upon isoprene. The sodium butadiene seems to be the best, however. The polymerization is complete in about three hours if it is held at a temperature of from forty to fifty degrees.

This constitutes a brief survey of the synthetic rubber industry up to date. Although it is very promising from the standpoint of the work which has been done, yet a great deal more remains to be done before the natural rubber securities need be disturbed again either in the United States or in Europe.

Information Exchange

Rubber Thread Strands

Inquiry from A. C., Milan, Italy.—Under separate cover I am sending you samples of rubber thread strands for airplane shock absorbers such as are used by the Italian Air Service. Please put me in touch with American manufacturers who can supply this article in large quantities. I would require 100,000 yd. of this cord in diameters of ½, 9/16, and ⅝ in. diameters and would pay against shipping documents.

Rubber Apparatus and Machinery

Inquiry from S. O. & J., New York.—We would like to be put in touch with American concerns in a position to manufacture metal apparatus used on rubber plantations. We are particularly interested in the following articles: Tapping knives, lathes for turning and grooving rubber machine rolls, mangle machine rolls for rubber plantations, enameled coagulating pans, latex pails, galvanized spouts and porcelain latex cups.

Rubber Machinery

Inquiry from H. C., New York.—Kindly put us in touch with manufacturers of machinery for making tires and other rubber goods.

Wants Line of Mechanicals

Inquiry from E. D. W., Los Angeles, Cal.—I am seeking a good line of mechanical rubber goods to handle on the Pacific Coast and would like to have you to put me in touch with a few reliable manufacturers of such articles.

Scrap Casings and Tubes

Inquiry from G. T. & R. C., Indianapolis, Ind.—Kindly put me in touch with buyers of old automobile tire casings and inner tubes.

Grinder for Hard Rubber

Inquiry from T. F. F., Newark, N. J.—Kindly tell us where we can purchase a grinder for finishing hard rubber valve discs.

Rubber Thickness Gages

Inquiry from B. S. C., Chicago, Ill.—Kindly supply us with the names and addresses of manufacturers of good thickness gauges for use in our rubber factory.

Coal Gas for Automobiles

Inquiry from H. C., New York.—Kindly tell me if any American concern makes rubber containers such as are used for storing coal gas for fuel on motor cars.

Rubber Footwear Repair Machinery

Inquiry from L. T. J., Toronto, Canada.—Kindly put us in touch with a concern manufacturing equipment for vulcanizing rubber boots and shoes in repair work.

Enlistments in Army and Navy

NAME	EMPLOYER	BRANCH OF SERVICE
Ralph O. Potter	Quaker City Rubber Co. (Philadelphia Branch)	Secret Service
Thomas C. Ridsdale	" " " "	Base Hospital No. 10
Harold Ritchie	" " " "	U. S. Infantry
Geo. F. Eberling	" " " "	U. S. Navy
Fred A. Henry	" " " "	Jefferson Hospital Unit
Katherine Lufkin	" " " "	Philadelphia Navy Yard
Leonard Pratz	" " " "	Machinery Gun Co.
John Steed	" " " "	Aviation Section
Charles B. Yerger	" " " "	U. S. Army
Henry Helms	" " " (Chicago Branch)	1st Reg. Ill. Na. Gds.
Lloyd Felter	" " " "	" " " " "
Leslie Evans	" " " "	Field Hospital Corps
Whitney Binz	" " " "	7th Reg., I. N. G.
F. L. Rogers	" " " (Pittsburgh Branch)	Officers Training Camp Chattanooga, Tenn.
J. S. Royal	" " " (New York Branch)	U. S. Army
F. L. Rogers	" " " "	Aviation Section
G. Mitchell	" " " (Wissinoming, Pa.)	Enlisted
J. Fisher	" " " "	"
D. Lucero	" " " "	"
B. Waters	" " " "	"
John Williams	" " " "	"
David Fisher	" " " "	"
Edgar Bordley	" " " "	"
Charles E. Brown	" " " "	"
William Pepperman	" " " "	Enlisted Field Artillery
L. Tilegan	" " " "	National Army
F Brady	" " " "	" "
William Knapp	" " " "	" "
David Boyd	" " " "	N. G. P. Ambulance
Charles Sanford	" " " "	Enlisted Com.
Dr. C. A. Barron	" " " "	Enlisted Med. Dept.
John Depew	" " " "	N. G. P. Ambulance
Joseph Tomlinson	" " " "	" "
John Piercy	" " " "	N. G. P. Artillery
Charles Meyers	" " " "	Enlisted Infantry
Russell McLaughlin	" " " "	" "
Robert Kuhn	" " " "	N. G. P. Infantry
Howard Knobel	" " " "	Enlisted N. R.
Patrick McKerney	" " " "	National Army
Elmer Rohrman	" " " "	" "
Daniel McFadden	" " " "	" "
Leo Grodzinski	" " " "	" "
Joseph Tessull	" " " "	" "
Caleb Summers	" " " "	" "
Alexander Hall	" " " "	" "
George Mulvey	" " " "	" "
John Andrzejewski	" " " "	" "
Frank Burr	" " " "	" "
David Summers	" " " "	" "
Theodor Broski	" " " "	" "
George Ross	" " " "	" "
Joseph Dickson	" " " "	Enlisted
Charles Thompson	" " " "	National Army
W. W. Hill	United States Rubber Co.	Mass. Engineers
Charles J. Holmes	Kelly-Springfield Tire Co. (Baltimore Branch)	Lieut.-Com., U. S. N.
Thomas Delaney	" " " "	165th Infantry, U.S.A.
R. W. Llewellyn	" " " (Columbus Depot)	2nd Ohio Field Hospital Co., 37 Div., U. S. A.
John W. Maginnis	" " " (New York Branch)	Seaman, 1st Bat., Naval Militia N.Y.N.G.
John M. Kelly	" " " "	Co. B, 71st Reg., N.Y.N.G.
William F. Daly	" " " "	Co. C, 12th Reg., N.Y.N.G.
Vance L. Hunter	" " " (Atlanta Branch)	Battery B, U. S. F. A.
William A. Brown	" " " (Philadelphia Branch)	.....
C. E. Rodgers	" " " "	Battery F, 312th U. S. F. A.
Jack Manning	" " " (Atlanta Branch)	Battery B, 116th U. S. F. A.
T. Jenkins	Globe Rubber Tire Mfg. Co.	.....
J. Keating	" " "	.....
Donald Parks	K. & W. Rubber Co.	.....
Joseph Benton	" "	.....
Leo Homier	" "	.....
Howard Wharton	" "	.....
Harry Cassel	" "	.....
E. C. Markham	" "	.....
Leo Brubaker	" "	.....
John E. Yeagle	" "	.....
Russell Sonner	" "	.....
Jay Shaffstall	" "	.....
Clarence Ritchey	" "	.....
Lee Riley	" "	.....
Philip Fritzinger	" "	.....

Goodyear Business and Plans

In common with the performances of former years, the annual meeting of the Goodyear Tire & Rubber Co., Akron, Ohio, developed the fact that the past year's business was the most successful in volume and profits of any year in the company's history. Gross sales jumped from $63,000,000 to $111,000,000 and net profits from $7,003,330.09 to $14,044,206.10, an increase of 74 per cent in volume and 100 per cent in profits. And of this volume less than one per cent was contributed by direct war business.

President F. A. Seiberling, in his report to stockholders, stated that plant extensions under construction a year ago had been completed, nearly doubling the company's productive capacity and providing facilities for several years to come.

"To provide for these extensions," he said, "the directors during the year increased the fixed capital of the company by the sale of $7,500,000 preferred stock and $3,372,000 common stock. The company's good will, growing out of satisfactory trade relations with over 70,000 customers and more than a million users of its products, is steadily increasing in value and constitutes its most valuable asset, though not listed in our balance sheet. And the patents, trade-marks, designs, etc., although worth millions of dollars to us, are listed on our statement at only $1.00.

"We have earned the past year, subject to deductions for federal tax, 61½ per cent for the common stock of this company, the highest record we have ever made.

"We have been cooperating closely with the Government in supplying what needs we could, because we felt that it was our duty to measure up to our opportunities in this respect, and we are going to support the Government's program in the rubber line to our limit."

All of the directors were reelected, as follows: F. A. Seiberling, C. W. Seiberling, G. M. Stadelman, F. H. Adams, P. W. Litchfield, H. B. Manton and J. P. Loomis. The directors in turn elected the following officers: F. A. Seiberling, president and general manager; C. W. Seiberling, vice-president and manager of purchases; G. M. Stadelman, vice-president and manager of sales; P. W. Litchfield, vice-president and factory manager; A. F. Osterloh, secretary; W. E. Palmer, treasurer and assistant secretary, and H. J. Blackburn, second assistant treasurer.

Only one change was made in the list of officers—the election of W. E. Palmer as treasurer, succeeding F. H. Adams, who retires from that office, although retaining his membership on the board of directors. The election of Mr. Palmer brings to the treasurer's office an employe whose connection with the company covers almost the entire period of Goodyear history, and emphasizes the success that can be attained in a big corporation today through constant application and loyalty. He has advanced by sheer merit from a $50-a-month clerkship to the treasurership of a concern doing more than $100,000,000 worth of business in a single year. As secretary to the board of directors ever since its organization, he has handled practically every big financial matter that the company has transacted.

Goodyear men are agreed that the company's policy of mixing the best material obtainable with the most skillful workmanship that can be marshaled will make for a larger volume of business the coming year, notwithstanding the uncertainties of war that may face the country. The Goodyear policy is to keep in tune with the Government's program.

W. D. MOFFAT
PRESIDENT

W. I. SEAMAN
TREASURER

ROBERT BROWN
SECRETARY

THE RUBBER AGE AND TIRE NEWS

H. M. WILLIAMS
EDITOR

W. M. MILNER
ASSOCIATE EDITOR

PETER P. PINTO
MANAGING EDITOR

GEORGE NEWBOLD
BUSINESS MANAGER

Vol. II | December 10, 1917 | No. 6

IN the tire trade it is becoming a more and more recognized fact that, in small communities at least, the hardware store is the logical center for the retail merchandising of tires and automobile accessories and that the hardware dealer can be more economically and more easily sold through the hardware jobber than by the direct solicitation of the manufacturer. For some years past manufacturers of tires have been making large advance sales to hardware jobbers and in some quarters have been making special inducements to develop this business.

Some manufacturers consider the hardware jobber a particularly desirable customer. The reasons for this are obvious. The hardware jobbers as a class have ample capital; their businesses stand on firm foundations; they are easily able to meet obligations and to take cash discounts. Through elaborate selling organizations they are in intimate and frequent touch with the retailers, and being in position to extend credit to desirable merchants they are able to secure orders where manufacturers' representatives fail. In other words, they can make sales at a lower selling cost than the manufacturers. Another reason is that retailers are accustomed to buy most of their merchandise from the jobbers in whom they have confidence. Manufacturers' representatives calling on the same dealers usually find it difficult to change the course of trade from the recognized channel.

The tire industry is comparatively new and has not as yet accumulated a code of trade ethics, customs and usages as have older lines. These will come after the production curve has ceased to show the spectacular rises that have characterized it for the last few years and when the tire business will have become more standard and more steady. Then the value of the distributors will be more fully recognized; their ability to take part of the factories' output will be appreciated to a greater extent, and more liberal and consistent policies will be adopted for the protection of all interests if this be found to be of advantage.

At the present time the jobbers and wholesale distributors to whom manufacturers look for advance orders feel that in many ways they are not accorded all the protection entitled and that manufacturers do not follow consistent and uniform policies toward them.

Shortage of Coal

Reports from the Cleveland and Akron districts show that the shortage of coal has begun to be relieved by small shipments from the adjacent mines. Manufacturers can ill afford to run short of fuel under present business conditions, and a lack of supply such as they have just experienced will show the absolute necessity of conserving as far as possible the available supply. This can be accomplished by seeking the numerous small leaks that that occur in plants and correcting them.

Undoubtedly many rubber factories, especially those whose progress has been fast, have not sufficiently investigated their power plants in an attempt to find out whether the maximum efficiency is being obtained. In others much useless waste of power is tolerated by inefficient and unnecessary electric lights. Rush of production often causes a machine to be used which is known to be wasteful and which in ordinary times would be overhauled or a new machine obtained. An earnest endeavor should be made to correct such faults, for every pound of coal now saved will aid in the present crisis.

Enlistments and Labor

The labor situation over the country is far from satisfactory and many manufacturers are beginning to wonder how they will operate their plants after the next draft takes place. Many more men will be withdrawn from the industry, causing an acute shortage which, added to the present labor shortage, may force a serious curtailment of operations. With so few skilled men in the field, wages will be increased by the larger manufacers and labor will flock to those centers where its earning capacity will be greatest.

Several schemes suggest themselves as a solution to this problem, and both are likely to be used to a much greater extent than at present. Women will be employed where men are not available and manufacturers will need to make conditions more satisfactory for the workers than in the past in order to hold the men from going to a competitor or to another trade.

Women have proved their worth in various kinds of work and will be used to a still greater extent when manufacturers begin to realize that it was by this dilution of labor that England solved its labor problem when the industries were depleted by the many enlistments of skilled workers. It will be profitable to American industries if they will apply the experiences of their British brothers to their own cases.

It is to be hoped that when a further depletion of the labor ranks occurs, the rubber industry will not be so vitally affected as industries where conditions are less satisfactory.

News of Interest to the Rubber Industry

Bronx Auto Show Feb. 9-16—Auto Manufacturers Offer Government Use of Plants—First Allotment of Spaces for Boston Auto Show—Goodrich Provides for Coal Shortage by Buying Coal Mines—Munger Wins Rim Patent Decision

Goodrich Buys Coal Mines

It is reported that in order to protect its plants from a coal shortage that might cause a shut-down, the B. F. Goodrich Co. has purchased the Wheeling Valley coal mines. These mines are in Bellaire, Ohio, and the entire output of the mines will be used by the Goodrich company. The cost was approximately $150,000.

At a recent report of the department of public relations of the company established two years ago it was announced that although the number of employes is now greater, the number of accidents has been cut down 20 per cent. The following is the report in brief:

"During the two years since then 6,000 employes have been paid compensation during sickness; 3,200 classes have been instructed by the bureau of education in primary studies; 16,000 students have attended the classes; 120 families of 120 deceased employes have received an average of $750 insurance each; 48,000 visits to sick employes have been made by Goodrich nurses; forty employes have been placed on the honor service roll, and are receiving service annuities; 176 men and women employes have received prizes for useful suggestions; although the number of employes now is greater than ever before the number of accidents has been cut down 20 per cent."

Adoption of Trade Acceptances

At a recent meeting of the American Trade Acceptance Council held under the auspices of the New York Credit Men's Association, a country-wide movement was launched for the adoption of the trade acceptance in place of the open book method of credit as an effective means of meeting the largely increasing demands of the Government on the credit facilities of the nation.

Bronx Auto Show to Be Held

The Bronx Automobile Dealers' Association has decided to hold an automobile show in the Bronx, Feb. 9-16, at the Second Field Artillery Armory, Franklin avenue and 166th Street. D. J. Barrett is chairman of the show committee. Other active workers are J. B. Elsey, Homer Waldemeyre, Joseph Myers, A. J. Higgins, Edward Gillice, William Muller and A. B. Hurwitch.

National Branch Moves

The National Rubber Co. of New York, Chicago, Ill., has moved from 2112 Michigan Avenue to 1840 Michigan Avenue, where it now occupies a three-story building. The retail department on the ground floor will represent a model tire shop.

Marvel Stock to Be Reduced

The Marvel Rubber Co., Woonsocket, R. I., recently filed a copy of a resolution passed by the corporation to reduce the capital stock from $500,000 to $100,000.

Schrader Employes in the Service

A. Schrader's Son, Atlantic Avenue, Brooklyn, N. Y., reports that fifty-four of its employes have joined the colors and are serving in various branches of Government service. The subscription of the company's employes to the second Liberty Loan totaled $365,000.

Teachers Inspect Federal Plant

A part of the regular program of the Wisconsin State Teachers' Association's annual convention in Milwaukee is a trip to Cudahy, Wis., seven miles distant, where the school teachers inspected the big plant of the Federal Rubber Co. In making the visit to this modern plant, the convention delegates obtained much valuable information concerning the development and refinement of rubber which they impart to their students in the class room.

WISCONSIN TEACHERS AT THE PLANT OF THE FEDERAL RUBBER CO.

Auto Factories Offered to Government

Following a call from the National Automobile Chamber of Commerce, more than 150 manufacturers of automobiles, who are members of the Detroit Athletic Club, voted to turn over the vast productive facilities of the industry to the Government as fast as the Government can utilize them. In the meantime automobile makers will keep their organizations intact. By unanimous vote of the meeting the following telegram was sent to Daniel Willard, chairman of the War Industries Board, in Washington:

"The automobile industry, as represented by more than 150 manufacturers, in session here today, volunteer its hearty support, and to a man express their willingness to turn their facilities over to the Government as fast as the Government can make use of them. In the meantime, we hope to keep our organization intact so as to conserve the greatest possible potential strength to the present and future war plans of the Government."

Hero Land Exhibits of Smuggled Rubber

Of considerable interest to visitors at Hero Land, Grand Central Palace, New York, who have heard and read of the efforts of German agents in this country to smuggle rubber and other war necessities into the Fatherland, is an exhibit of several scores of parcel post packages taken by the British from neutral ships that they had searched.

Many of them were mailed from New York. Rubber in every form was in the packages. One German actually sent a package containing one rubber shoe, while another contained one package of dental rubber and dozens contained crude rubber. There were similar packages shipped from Brazil and others from Java. They all show how the Germans need rubber and the completeness of their organization to get it, if only in packages containing a few ounces.

Goodyear Changes

The exigencies of war and other necessities are bringing promotions and changes in the branch administration department of the B. F. Goodrich Rubber Co., Akron, Ohio. E. D. Yount has been appointed local manager of the South Bend, Ind., depot, replacing W. W. Vandeveer, who has been transferred to the Sales School. J. W. Moore has been made local manager of the Fort Worth, Tex., depot. F. S. McNaul has been promoted to local manager of the Hutchinson, Kans., depot. W. J. Balaun has been advanced to the local managership of the Waco, Tex., depot. F. T. Reuter becomes local manager of the Oklahoma City depot. W. F. Burbank succeeds A. E. Lees of the San Diego depot. S. S. Clark assumes charge of the Salina, Kans., depot. T. B. Graham becomes operating manager of the Seattle branch, succeeding C. J. Pomeroy, who has entered the Government service.

Boston Automobile Show

The first allotment of spaces at the Boston Automobile Show to be held in the Mechanics Building, March 2-9, have been made by the Motor and Accessory Manufacturers' Association at its New York offices. Among the twenty-nine firms to which booths have been allotted are the Century-Plainfield Tire Co., Plainfield, N. J., and A. Schrader's Son, Inc., 783 Atlantic Avenue, Brooklyn, N. Y. Although several of the exhibitors have secured large areas, there is still room for additional members, who may want to secure space before the show opens.

Munger Rim Patent Decision

According to a recent decision handed down by Judge Manton in the United States District Court, Southern District of New York, the contention of the Perlman Rim Corp. that it be declared the owner of the Louis de F. Munger rim patent is set aside. The decision gives Mr. Munger the right to collect royalties from the Perlman Co. for the manufacture of the infringing rim, and further, legal authority for bringing suit against any and all who have made what he considers infringing rims.

Plymouth Not Destroyed by Fire

In the Nov. 25 issue of THE RUBBER AGE AND FIRE NEWS it was erroneously reported that the factory of the Plymouth Rubber Co. in Stoughton, Mass., which was recently destroyed by fire would not be rebuilt in that location. This company's plant was not destroyed by fire and is located at Canton, Mass., not Stoughton. The company has no plant in Chelsea, Mass., as was reported.

News of the Rubber Metroplis

Goodrich Employees Give Thanksgiving Remembrances to Men in Service—New Road Between Akron and Youngstown—Coal Shortage Relieved—Goodyear Friars Give Minstrel Show

Thanksgiving Presents for Soldiers

(Special Akron Correspondence.)

Two tons of cigars, cigarettes, candies, magazines and other Thanksgiving luxuries were sent to Camp Sherman, Chillicothe, Ohio, in a Goodrich truck by 4,000 workmen in the Goodrich fabric department. It reached camp Thanksgiving morning. M. A. Flynn, head of the department, supervised the collecting and dispatching of the big surprise.

Some idea of the size of the gift may be obtained from the following figures: 10,000 cigars, 60,000 cigarettes, 400 pounds of magazines, besides candy, gum, blankets, cookies and the like.

for handling the crushing throng that cheered itself hoarse as the new flag was run out on the halyard. As Mayor Laub arose to make the address he gazed into a sea of faces that extended 100 yards down Rubber street, at one end of which the flag was raised. The crowd overflowed far into Main street; grimy factory workers standing shoulder to shoulder with factory officials—all united in a patriotic brotherhood.

For the dedication A. B. Jones and E. C. Shaw had directed that all departments be dismissed at 11:30 a. m. The ceremony was opened with patriotic music by the 22-piece Goodrich band and came to a close with Mayor Laub's address.

SOLDIERS REMEMBERED ON THANKSGIVING—(Insert) M. A. FLYNN, COLLECTION SUPERVISOR

Jones on Health Board

(Special Akron Correspondence.)

A. B. Jones, director of plant administration at the B. F. Goodrich Co., has been appointed by Mayor Laub a member of the Akron city health board. His term will last five years.

Goodrich Service Flag

(Special Akron Correspondence.)

The brick-lined canyons of the B. F. Goodrich Co. recently welcomed a tri-colored stranger, the modern symbol of patriotism, the service flag. The emblem was unfurled before 20,000 watchful eyes, climaxing a brief but impressive ceremony.

In the white field of the big flag are 1,414 true-blue stars, one for each Goodrich man now shouldering a rifle or feeding a machine gun for Uncle Sam.

Elaborate preparations had been made

The stars represent 827 factory employes, 152 office employes and 430 Goodrich branch men. Some are in national camps and a few are with General Pershing in France.

Road to Youngstown

(Special Akron Correspondence.)

Akron, the rubber city, and Youngstown, the steel city, are at last connected by a surfaced road, fifty-two miles long, fit for auto travel in any kind of weather.

The work was rushed through as the result of efforts made by the special roads committee of the Council of National Defense, of which Raymond Beck, chairman of the Akron Automobile Club's road committee, is a member.

A second road will be completed within a few days, Mr. Beck announced. A general road-building scheme that is to affect all Ohio roads is being carried out in order to establish an auxiliary means of communication to the railroads.

French Now an Aviator

(Special Akron Correspondence.)

H. S. French, Akron newspaper man and former Akron correspondent for THE RUBBER AGE AND TIRE NEWS, has written to friends in the "Rubber City" announcing that he is now connected with the flying corps of the American expeditionary force in France. "I have been into the clouds several times," he writes. "It is a strange sensation, but one soon gets used to anything over here."

Committee to Aid Government

(Special Akron Correspondence.)

C. B. Raymond, vice-president at the B. F. Goodrich Co., has been notified of his appointment on the Rubber Association of America's committee, which has been formed to co-operate with the Government in war matters. Other Akron men on the committee are: P. W. Litchfield, factory manager of the Goodyear Tire & Rubber Co., and N. S. Firestone, president of the Firestone Tire & Rubber Co.

A meeting of the entire committee, made up of a number of the most influential rubber men in America, has been called at Washington in the near future.

Coal Shortage Relieved

(Special Akron Correspondence.)

The electric power situation, which has been so serious in Akron as to necessitate the temporary closing of several factories, has been temporarily relieved.

The shortage occurred when the Northern Ohio Traction & Light Co., which supplies the city with light and power, was unable to get coal. The plant requires 750 tons a day when in full operation. At one time there was not a three days' supply on hand. With the arrival of 4,000 tons this week and the promise of immediate shipments a ten-day supply is now assured.

Akron stores have been curtailed in their illumination both in signs and in show windows. Several small factories depending entirely on the N. O. T. for fuel closed entirely for a few days. The larger companies loaned coal to the power company and it was able to run part time. All are now receiving their full power quota again.

Seiberling and Lee Honored

(Special Akron Correspondence.)

C. W. Seiberling, vice-president of the Goodyear Tire & Rubber Co., was elected president of the Akron Chamber of Commerce at the annual meeting of directors held recently.

Robert E. Lee, superintendent of labor at the Firestone Tire & Rubber Co., was elected first vice-president.

Mr. Seiberling was attending the Goodyear minstrels at Camp Sherman, Chillicothe, Ohio, when a committee called at his home to inform him of his election. He did not learn of it until two days later.

Goodyear Friars Give Minstrel Show

(Special Akron Correspondence.)

The Goodyear Friars' Club, an organization composed of Wingfoot amusement-makers, traveled to Camp Sherman, Chillicothe, Ohio, Dec. 1 to stage a minstrel show for the drafted soldier boys in training there.

The feature of the entire performance was when Director Al. Herring gave the word and the 5,300 voices in the audience joined in the chorus of "Over There."

C. W. Seiberling and other Goodyear officials accompanied the Friars to the big camp. The members of the club who attended were: C. R. Bender, E. Sprankle, G. Appleby, F. Colley, S. Vaughan, A. X.

Acher, R. L. Mackey, A. J. Barry, Elmer Clark, Larry Miller, H. A. Miller, H. E. Daily, D. Gallagher, W. Wise, Al. Herring, J. Herbert, Ed Marting, J. N. Hoegh, C. F. Moore, H. Pastorius, E. Falor, E. P. Sullivan, M. Tobin, N. F. Staley, H. Connelly, G. Dunlevy, J. Dunlevy, E. Walkup, P. F. Persons, Will Hugnelet, O. P. Kidder, Joe Ebner, Ed Clarke and H. Banks.

Enlistments Cause Labor Shortage

(Special Akron Correspondence.)

Another serious labor drain on Akron rubber companies was begun here a few days ago when the first recruits of the new mechanical unit being raised here were accepted into service. Expert tire repair men, machinists and others who can keep Uncle Sam's army in fighting trim are being asked to join the colors.

Large Floating Population

(Special Akron Correspondence.)

According to an estimate made by an Akron newspaper, over 225,000 men seek employment here annually. The estimate is based on figures compiled by the three largest rubber concerns in the city—Goodrich, Goodyear and Firestone.

Of the 750 who seek employment daily 650 want work in the factories and 100 want office work. The figures are staggering when it is considered that the population of Akron is only 150,000. It shows what a large floating population the rubber metropolis has.

Seiberling's Son in Service

(Special Akron Correspondence.)

"Junior" Seiberling, son of Charles W. Seiberling, vice-president of the Goodyear Tire & Rubber Co., is in at last.

After vainly trying to get into numerous branches of the Army and Navy service and after being rejected on account of near-sightedness young Seiberling was taken into the Y. M. C. A. army work.

He is contented at last. He will don the uniform and have a chance to do his bit, first at home and later, perhaps, in France.

Noah Has Enlisted

(Special Akron Correspondence.)

Another prominent Akron young man who has joined the colors is Robert Noah, son of A. H. Noah, formerly president of the Diamond Rubber Co., and one of Akron's wealthiest rubber men. Young Noah has enlisted in the mechanical unit of the motor transport division and has already left for the East to embark for France at an early date.

Letter from Germany

(Special Akron Correspondence.)

Although the big Goodrich organization reaches to all parts of the world and it is no uncommon thing to receive a letter from a foreign country, yet when one came to Akron from Germany recently it caused a flutter in the heart of at least one widely known rubber official, Dr. Oscar B. Junek, head of the Goodrich educational department. It was from his brother Francis in Germany, was dated at the Imperial Royal Department, Augmenting Commando, No. 28, Prague, Aug. 17, 1917, and reads as follows:

"Dear Brother: This is to inform you that I have been drafted into the Third Squadron of the famous Black Hussars and that our regiment leaves for Italy next month. Austria is winning on the whole line. Father and mother are in good health and ask news from you through Miss N. in Zurich.

"Of food we have enough, but not enough cigarettes. Write home soon. Pardon my writing with a pencil. I write on the saddle of my steed. It looks like the writing of a kid of the second grade.

"P. S. Write to me through Miss N. She will send it to Prague. If I still be alive maybe I shall get it. 'Times change and we change with them.' Isn't it true? But it is too late to prepare medicine. Kiss your children for me."

"Think of the value this letter might have been to the Allied cause if it had come sooner," commented Dr. Junek. "It contained advance news of a proposed onslaught on Italy."

Goodrich Girls Knitting Tunics

(Special Akron Correspondence.)

In the rest rooms of the B. F. Goodrich Co., the women and girl employes now spend a part of their noon hour knitting sweaters and other articles for the boys who have joined Uncle Sam's fighting forces. Approximately 300 sweaters worn by as many soldiers today were knitted by these industrious Goodrich knitters. Among the best of them are Miss Bessie Bennet, who holds the knitting laurels, Misses Laura Marshall, Marie Runyon, Cora Williams, Grace McGovern, Ethel Maxwell and Edna Bock.

KNITTING ARTICLES FOR UNCLE SAM'S FIGHTING BOYS

Marathon Business Outlook

(Special Akron Correspondence.)

That there is no trade depression, no slowing up of the rubber business, is shown by statistics just compiled by the Marathon Tire & Rubber Co. of Cuyahoga Falls.

This company is considerably behind in filling orders because gross sales for September, October and November, the first months of its fiscal year, exceeded those for the same months of any previous year by 60 per cent.

Spring orders booked to date are approximately 80 per cent ahead of orders booked up to the same date in any preceding year.

"The only trade depression in Summit county is found in talk, not in actuality," say Marathon officials. "We are preparing for and expecting the biggest year in our history."

Death of Mrs. Swinehart

(Special Akron Correspondence.)

Mrs. J. A. Swinehart, 136 Adolf avenue, died in Akron, Dec. 3, after a short illness contracted while visiting her son, Ben C. Swinehart of the Republic Rubber Co., Youngstown, about five weeks ago. She is survived by her husband, J. A. Swinehart, founder of the Swinehart Tire & Rubber Co. of Akron.

Bolles with Factory Sales Force

Mr. Bolles, formerly connected with the Paterson, N. J., sales branch of the Sterling Tire Co., is now one of the factory sales force.

Mason Erects Searchlight

Should the time ever come that it would be necessary for Kent to repel an enemy air raid, the town is ready. A large searchlight, powerful enough to detect a Zeppelin or airplane, has been erected on the roof of the chemical laboratory of the Mason Tire & Rubber Co., Kent, Ohio, in that thriving village, and plays nightly upon a painted bulletin advertisement placed on the factory water tank.

The searchlight is a 24-in. battleship reflector, with a 1000 watt lamp, controlled by an auto time switch eight-day clock. The ray from this powerful lamp is thrown 700 ft. to the water tank, which towers 125 ft. in the air.

The light was first turned on several days ago, and the stream of brilliancy shooting into the heavens attracted much attention. A searchlight of these dimensions and power is a novelty in that vicinity.

Mason Earnings for Last Fiscal Year

The annual report of the Mason Tire & Rubber Co., Kent, Ohio, for the fiscal year ending Oct. 31, as read at the annual meeting held recently, shows gross sales exceeding $1,200,000 and total net profits amounting to $181,504.36. Deductions for income tax reserve, preferred stock dividends paid during 1917 and preferred dividend reserve leave a balance to be put into the surplus of $104,330.32. This surplus for the year amounts to within a fraction of 20 per cent on the common stock.

The following directors were elected at the meeting: O. M. Mason, D. M. Mason, D. N. Mason, M. B. Mason, John N. Diehl and R. W. McKinnon. The officials were re-elected, namely: O. M. Mason, president; D. N. Mason, treasurer and general manager, and R. W. MacKinnon, secretary. The stockholders voted unanimously to increase the par value of the preferred stock from $10 to $100 per share.

Cleveland Coal Shortage

While for several weeks many of Cleveland's big manufacturing plants have been operating on what might be called a "hand-to-mouth" basis with respect to the coal supply, there are no immediate indications of a coal famine for factories. The "near acute" situation under which Cleveland plants have been operating is expected to be relieved by the cancellation of the priority order, which provides that practically all coal mines in the Ohio-West Virginia district be diverted to the Northwest iron ore district. The cancellation order means that from 600,000 to 1,000,000 tons of coal shipments a week will be cut off from the Northwest and turned over to the Cleveland and Ohio trade.

Washington News

War Trade Board Announces List of Persons, Firms and Corporations in Foreign States with Whom It is Illegal to Trade Without a License —Industrial Service Section Organized—Dr. Pratt Urges Annihilation of German Trade

Enemy Trading List Announced

List of Persons, Firms and Corporations in Foreign States with whom it is Illegal to Trade Without a License, Compiled and Issued by the War Trade Board for the Guidance of U. S. Merchants.

Since the passage of the trading-with-the-enemy act, approved October 6, 1917, the War Trade Board has received from exporters, importers, and other persons engaged in foreign trade numerous and urgent requests that there be published, for their guidance in observing the provisions of the statute, a list of those concerns in foreign countries with whom, under the provisions of the trading-with-the-enemy act, it would be illegal to trade without a license.

In response to these representations the War Trade Board, in cooperation with other governmental departments, has compiled a list known as the Enemy Trading List, which has been made public to-day and is now being distributed to merchants and commercial organizations throughout the country.

Notes on the Enemy Trading List

This list contains the names of some 1,000 concerns in Latin America, with the following prefatory note:

1. The Enemy Trading List is compiled for the benefit of American merchants who, by the trading-with-the-enemy act, are prohibited under penalties from trading with the enemy or ally of enemy without first obtaining a license from the War Trade Board.

This is a list of enemies and allies of enemies, and other persons, firms and corporations, whom there is reasonable cause to believe have acted directly or indirectly, for, on account of, on behalf of, or for the benefit of enemies and allies of enemies.

This list does not purport to be a complete list. Any person, firm, or corporation trading with any other person, firm, or corporation whom there is reasonable cause to believe is an enemy or ally of enemy, or in such trade is acting for, on account of, on behalf of, or for the benefit of an enemy or ally of enemy, is not relieved from the prohibitions and penalties imposed by the trading-with-the-enemy act by reason of the fact that the name of such other person, firm, or corporation does not appear upon this list.

2. In order to minimize, as far as possible, any inconvenience which may be caused to American merchants by the dislocation of foreign trade owing to the operation of the trading-with-the-enemy act, the War Trade Board is collecting and classifying the names of nonenemy firms who may be able to act as substitutes for firms who may prove to be enemies or allies of the enemy within the meaning of the trading-with-the-enemy act. A considerable amount of information is already available at the War Trade Board, and it will be in many cases possible to suggest the names of satisfactory substitutes without the necessity of referring the matter abroad. The board is, however, prepared on application to inquire of United States consuls abroad for the names of suitable substitutes. When the applicant wishes this done by telegraph he will be required to undertake to pay the cost of telegraphic correspondence.

The board assumes no responsibility whatever for the credit, standing, or financial responsibility of such substitute firms.

It would greatly facilitate the work of the War Trade Board if applicants in making inquiries would specify the particular trade or trades for which substitutes are required.

List to Be Telegraphed Abroad

3. The Enemy Trading List, of which this is the first issue, will be telegraphed on the day of its issue to the representative of the United States of America in each country abroad, who will be instructed to notify all American consuls, to whom persons abroad should apply for information as to the names on this list. Firms in the United States of America with agencies or branches abroad should, however, furnish such agencies or branches with copies of the lists as they are published. The list will be mailed as issued to all firms appearing on the mailing list of the War Trade Board, 1435 K Street NW., Washington, D. C.

4. Additions to and variations in this list will be published approximately on the 1st and 15th of each month. The lists will be published in the OFFICIAL BULLETIN, and in Commerce Reports, issued daily by the Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C., which is for sale by the Superintendent of Documents, Washington, D. C., or from the district offices of the Bureau of Foreign and Domestic Commerce as listed below, at $2.50 per year. Copies of the lists may also be obtained from the War Trade Board, 1435 K Street NW., Washington, D. C., and also from the branch offices of the War Trade Board, and the district and cooperative offices of the Bureau of Foreign and Domestic Commerce, as follows:

Branch offices of the War Trade Board.—Canal Bank Building, New Orleans, La.; 45 Broadway, New York, N. Y.; 216 Customhouse, San Francisco, Cal.; 825 Henry Building, Seattle, Wash.; 402 Third National Bank Building, St. Louis, Mo.; Federal Building, Galveston, Tex.; Savannah Bank & Trust Co. Building, Savannah, Ga.; Customhouse, Mobile, Ala.; International Bank Building, Los Angeles, Cal.; 748 Morgan Building, Portland, Oreg.; 305 Lafayette Building, Philadelphia, Pa.

District offices of the Bureau of Foreign and Domestic Commerce.—734 Customhouse, New York, N. Y.; 1801 Customhouse, Boston, Mass.; 504 Federal Building, Chicago, Ill.; 402 Third National Bank Building, St. Louis, Mo.; 1020 Hibernia Bank Building, New Orleans, La.; 307 Customhouse, San Francisco, Cal.; 848 Henry Building, Seattle, Wash.

Cooperative offices of the Bureau of Foreign and Domestic Commerce.—Chamber of Commerce, Cleveland, Ohio; Chamber of Commerce, Cincinnati, Ohio; Chamber of Commerce, Los Angeles, Cal.; Chamber of Commerce, Philadelphia, Pa.; Chamber of Commerce, Portland, Oreg.; Greater Dayton Association, Dayton, Ohio; South American Agent, Southern Railway, Chattanooga, Tenn.; General Freight Agent, Southern Railway, 96 Ignalls Building, Cincinnati, Ohio.

Industrial Service Section Organized

As the demands of the Government for more supplies of all sorts have increased there have necessarily arisen in the various departments placing war orders a considerable number of problems relative to proper adjustment of labor supply to the war needs.

In order to secure a basis of facts on which to work out policies, the Council of National Defense has authorized the director to undertake the following work:

1. To determine present and probable future demands for labor in war industries.

2. To determine in connection with the priorities committee of the War Industries Board the relative priorities of the labor demand.

3. To arrange for the supplying of the demand through the Department of Labor or such other governmental or civilian agencies as can best meet the demand.

4. To determine the needs for dilution of labor including the introduction of women into industry and recommend policies to be followed in regard thereto.

This work under the council has been put under the immediate charge of L. C. Marshall, who is designated chief of the section on industrial service. Mr. Marshall comes to this work from the deanship of the School of Commerce and Administration of the University of Chicago. He has given his time recently to the special consideration of labor matters as affecting certain procurement divisions of the War Department, and thus takes up the new work with broad general information and special detailed knowledge of a number of the more pressing problems.

It is not contemplated that there will be created under the council any agencies for executive action with respect to the problems concerned. The purpose is to have under the council a section to which these various labor problems may be brought for common consideration.

The new section will work in close cooperation with the War Industries Board and its priorities commitee and will, like the War Industries Board, bring to the council digested information from all Government departments as to the above subjects. Policies can then be worked out to secure the most efficient utilization of existing agencies and to faciiltate the development of such new agencies as may be necessary.

Urges German Trade Annihilation

"It is our privilege to put German trade out of business wherever we find it," said Dr. Edward Ewing Pratt, former chief of the Bureau on Foreign and Domestic Commerce, speaking at a conference of foreign trade interests at the Advertising Club of New York. "It is our Government's duty to see to it that no German concern, either in name or fact, is permitted to exist in this country, and to co-operate with our Allies in annihilating German trade as far as possible elsewhere."

Dr. Pratt emphasized the necessity of providing a practical program for combating German efforts to seize the commercial leadership of the world as soon as peace is declared. In the course of his address, Dr. Pratt said: "The maintenance and extension of our foreign trade are an effective belligerent move against Germany. Our Government should recognize them as such. Germany believes that through her foreign trade after the war she can regain a market for her products, pay for the raw materials that she must have and liquidate her war indebtedness."

American Rubber Patents

ISSUED NOVEMBER 20, 1917.

1,246,832—To Nels Ahrbin, Chicago, Ill. Tire-wrapping device.

1,246,838—To Martin P. Appell, near Galva, Ill. Tire-saving device.

1,246,870—To David L. Burnell and Louis J. Eberle, Nelsonville, Ohio. Heel.

1,247,014—To Arthur H. Rogers, Springfield, Mass. Rubber stamp of the band type.

1,247,207—To Marvin Bell, Ardmore, Okla., assignor of one-third to Lee H. Griffin and one-third to William F. Warren, Ardmore, Okla. Detachable tread for wheel tires.

1,247,257—To Henry Alfred Gardner, Washington, D. C. Vulcanized rubber composition and method of preparing same.

1,247,262—To Furney F. Green, Coalgate, Okla. Tire.

1,247,045—To Louis Wenzel, Jr., Pittsburgh, Pa. Pneumatic tire.

1,247,089—To Samuel T. Davis, Pittsburgh, Pa., assignor of one-half to James S. Demtriou, Pittsburgh. Pneumatic tire.

1,248,149—To Jons Monson, New York, N. Y. Vehicle tire.

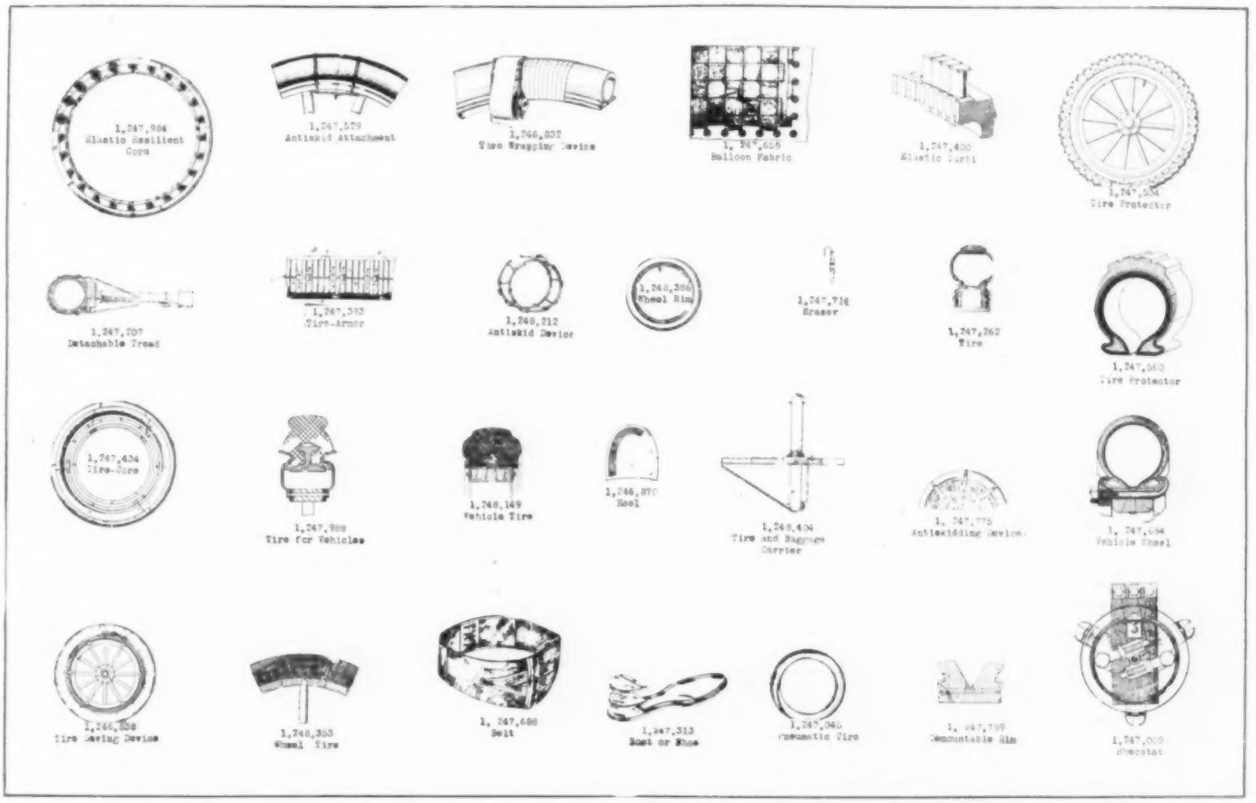
1,248,212—To Henry W. Walden, New York, N. Y. Anti-skid device.

1,248,226—To Alfred A. Wells, Caldwell, N. J., assignor to Ellis-Foster Co. Vulcanized cumaron rubber product and process of making same.

1,248,350—To Peter S. Larson, Beloit, Wis. Demountable rim for vehicles.

1,248,353—To John L. Lillich, Carbon Hill, Ala. Vehicle wheel tire.

1,248,386—To Elmer Oliver, Daytona, Fla. Wheel rim.



1,247,313—To Lewis Murr, Lynn, Mass., assignor to United Shoe Machinery Co., Paterson, N. J. Boot or shoe.

1,247,393—To Walter Glidden, Waterford, Ohio, assignor of one-half to Amos E. Roberts, Waterford, Ohio. Tire armor.

1,247,400—To Herbert T. Herr, Pittsburgh, Pa., assignor to Westinghouse Electric & Manufacturing Co. Blading for elastic fluid turbines.

1,247,434—To Earl M. McCurry, Columbiana, Ohio. Tire core.

1,247,529—To Ernest Hartley, Philadelphia, Pa. Anti-skid attachment.

1,247,534—To Henry Hortenstine, Gays, Ill. Protector for pneumatic tires.

1,247,560—To Louis Meyers, Isidor Meyers and Harry Weaderhorn, New York, N. Y. Tire protector.

ISSUED NOVEMBER 27, 1917.

1,247,658—To John R. Gammeter, Akron, Ohio. Balloon fabric.

1,247,684—To Lawson U. Hurlburt, Syracuse, N. Y. Vehicle wheel.

1,247,688—To Emil A. Kann, New York, N. Y. Belt.

1,247,714—To Walter B. Pershing, South Bend, Ind. Eraser.

1,247,775—To Frederick Winter, Holley, N. Y. Anti-skidding device.

1,247,789—To Thomas F. Burns, Oklahoma, Okla., assignor of one-half to R. P. Cruse, Oklahoma. Demountable rim.

1,247,814—To Ricardo Garza, San Antonio, Tex. Composition for sealing tire punctures and the like.

1,247,984—To Harry Meltzer, New York, N. Y. Elastic resilient core for automobile tires.

1,247,988—To Georges Albert Mortier, Preston, England. Tire for vehicles.

1,248,404—To Warren W. Routzahn, Arroyo Grande, Cal. Combination tire and baggage carrier.

Recent Incorporations

The Beacon Tire Company has increased its capital from $100,000 to $500,000.

Union Tire Co., West New York, N. J.; capital, $6,000; incorporators: Emma Tiffenbronner, Catherine E. Weber and Henry B. Fisher.

Public Service Tire & Supply Co., Cleveland, Ohio; Capital, $10,000; incorporators: H. J. Alperin, Stella Alperin and M. Gillson.

The Akron Seamless Rubber Tire Co., Akron, Ohio; capital, $100,000; incorporators: A. Bleecker, W. V. Smith, R. E. Weaver, Dean Hale and Mott Cook.

Bartlesville Auto Repair & Supply Co., Bartlesville, Okla.; capital, $10,000; incorporators: C. A. McDonald, J. O. Crane and S. B. Sherwin.

Ira I. Slomon, Inc., New York City; rubber, cements, shellac and varnishes; capital, $30,000; incorporators: S. Moore and M. L. and I. Slomon, 164 East 65th Street.

Premier Rubber Corp., Jersey City, N. J.; to deal in rubber goods; capital, $1,000,000; incorporators: G. L. Williams, Andrew M. Lowenthal and William Lowenthal, New York.

Fort Wayne Tire & Rubber Mfg. Co., Dover, Del.; capital, $500,000; incorporators: J. C. Brown, L. E. Kraft and H. J. Kare, Chicago, Ill.

T. J. Cooper Rubber Co., Jersey City, N. J.; capital, $75,000; incorporators: J. McLaren, W. Merkiff and R. Rudolph, all of Jersey City.

Case Stanton, Inc., Middletown, N. Y.; capital, $10,000; incorporators: C. W. Case and J. W. Stanton, Wurtsboro.

Rubber Association Activities

Committee to Aid in Winning the War

The Rubber Association of America has appointed a committee to study and determine how the association can best assist the Government in the prosecution of the war, and particularly how to bring about the construction and utilization of aircraft in overwhelming numbers at the earliest possible date.

Edgar Bryam Davis of the United States Rubber Co. was elected chairman of the committee, of which the other members are: Harvey S. Firestone, president of the Firestone Tire & Rubber Co., Akron, Ohio, and president of the Rubber Association; Paul W. Litchfield, vice-president and general manager of the Goodyear Tire & Rubber Co., Akron, Ohio; Charles B. Raymond, second vice-president of the B. F. Goodrich Co., Akron, Ohio; George B. Hodgman, president of the Hodgman Rubber Co., Tuckahoe, N. Y.; C. T. Wilson, president of the C. T. Wilson Co., 56 Wall street, New York City, and Harry T. Dunn, president of the Fisk Rubber Co., Chicopee Falls, Mass.

Licenses for Rubber Imports

The association has issued the following notice, addressed to rubber manufacturers and importers:

"Regarding the proclamation just issued by the president, that became effective forthwith, licenses will be required by our Government upon importations of rubber, the association is now in touch with the authorities in Washington and arranging with them plans necessary for the proper and effectual way of complying with the new regulations.

"No delay is at present anticipated in legitimate manufacturers and importers procuring the necessary licenses.

"A bulletin, giving full details and instructions as to the new arrangements, will be prepared and mailed out shortly."

Market for Manufactured Rubber Goods

NEW YORK, December 6, 1917.

The probability of tight money in the banks is a factor in the calculations of many merchants who handle rubber goods. The jobbers of the country foresee a continued contraction in civilian purchases and they expect it to become more noticeable in the latter part of February and in March. Another Liberty Loan is in sight for February, and on the first of March business men everywhere will have filed their tax returns with the Government. By June 15 these taxes will have to be paid. It is conceivable that there will be a change of considerable importance in the trade when it is realized more fully by business men to what extent they must pay out cash from their business for the purpose of war. It is, therefore, probable that conservatism will become more pronounced in many circles where the prosperity of the past three years has obscured many things.

Another thing that is certain to hold the attention of the rubber trade, as well as most other lines of manufacture, is that the Government has as yet made no formal announcement of its purpose to control the markets for rubber products. It can, nevertheless, readily be seen through the various trade conferences which are being held in Washington that the Government is going to take some action in this direction. Just what form the Government control may take cannot be foretold.

MECHANICAL GOODS

Manufacturers of rubber mechanical goods are having their troubles in getting sufficient quantities of fabrics for hose and belting, but it is very likely that the Government will see that their needs are supplied in time to prevent any serious difficulties for the reason that these manufacturers are producing necessaries of war. Hose, belting and packing, as well as many other of the sundry articles of rubber mechanical goods are needed by the factories working directly or indirectly for the Government, and by the Government itself.

Most manufacturers of mechanicals report that they are selling all the goods they can produce.

TIRES

Many tire manufacturers are reducing their outputs and it is rumored in the trade that jobbers and dealers are not availing themselves of the advantages of Spring datings as readily as they did last year. There may be an increase in tire prices on Jan. 1, but many distributors appear to be willing to forego the protection of Spring datings and purchase only quantities sufficient to cover their visible requirements.

It is not probable that the Government will take any measures to seriously curtail the automobile and tire industries for the reason that these are, with steel, the leading industries of the country and to disorganize them would seriously reduce the capacity of the country for producing revenue for war expenditures. However, the tire business is satisfactory for the season, especially so when the state of war is taken into consideration, and if it grows no worse the trade will have no reasons to grumble.

SOLES AND HEELS

There is no marked change in the sole and heel trade. The shoe manufacturers trade is quiet, while the shoe repair trade is normally active for this season of the year. Widely advertised soles and heels are in big demand, while unknown brands are moving slowly.

FOOTWEAR

Footwear manufacturers are devoting all their energy to the execution of Government contracts with the result that jobbers' and dealers' stocks are getting low and those of the factories are wholly exhausted. Manufacturers are making deliveries as fast as they can on orders taken last Spring.

Dec. 3 was the date set for the opening of bids for providing the Government with 15,000 pairs of rubber boots and 25,000 pairs of arctics for the Marine Corps. Only one bid was submitted, the bidder being the Hood Rubber Co., Watertown, Mass. The prices were $2.80 for the boots and $2.90 for the arctics, deliveries to begin in March and April next, and to be completed by June 1. The lack of competition is said to be due to the fact that previous Government contracts are taxing the capacity of the rubber shoe plants of the country.

A contract for 1,300 pairs of aviators' waders was awarded to the United States Rubber Co., on a bid of $12,000.

DRUGGISTS' SUNDRIES

Just at present the wholesale druggists' sundries business is quiet, due to the approach of the holidays. This is a normal condition and manufacturers have all they can do to fill Government contracts and orders in hand. There has been a big demand for spot goods, but manufacturers' stocks are so depleted in the lines sought that they have not been able to satisfy this demand to any extent.

Several druggists' sundries manufacturers are producing specialties such as comfort kits, air pillows and cushions, designed to make life easier for our soldiers in the trenches and in the training camps.

PROOFED GARMENTS

Manufacturers of rubberized garments have placed their facilities at the Government's disposal and supplies are said to be ample for all the Army's needs. Large contracts have been made for garments and proofed fabrics.

The Fabric Market

NEW YORK, December 6, 1917.

Raw cotton prices have experienced a heavy decline in the past week. Before the President's message the voluntary selling by producers called a halt, but when the President's speech suggested something like price fixing in all commodities, including cotton, the disposition to sell became general as far as the producer was concerned.

Egyptian Cotton

The strength of the American cotton market has contributed to making a very firm tone in Alexandria, where the price of 26.5 cents was attained for January, and there is a very good demand for spot goods. Arrivals from the interior are on a big scale and the stock in Alexandria has increased 175,000 cantars. As the shipping situation remains unchanged the stocks can but register a steady increase every week, and a day must eventually come when the position will be top heavy. This will probably exert a great influence on the course of prices.

Crop reports continue to be satisfactory and the Alexandria Cotton Co., Limited, estimates a final outturn of about six and a quarter million cantars.

Arrivals of tenderable Sakelarides qualities have been responsible for the narrowing of the discount between January and November, and this factor has also contributed to a smaller parity between futures and spot prices. Both of these narrowing tendencies will probably further develop as, in view of the limited freight facilities, stocks will continue to increase steadily every week.

As the season advances it appears to be evident that no quantities of Egyptian cotton will find their way to America. Americans are at liberty to buy in the Alexandria market and they can take cotton there if they wish to charter ships to carry it and take all the incidental risks but they cannot get any cotton via Liverpool.

ALEXANDRIA STATISTICS FOR THE WEEK ENDING OCTOBER 19, 1917.

	Arrivals. Cantars.	Exports (Bales) England.	Continent.	America.	Exports. Cantars.	Tot. stock. Cantars.
This week	246,036	1,117	3,588	....	35,383	955,450*
Same week, 1916	267,046	15,309	2,684	604	143,814	712,470
" " 1915	507,920	8,628	715	2,875	92,624	1,376,318
Since Sept. 1, 1917	972,014	31,425	11,067	....	324,564	....
Same time, 1916	1,117,829	52,504	10,411	2,124	498,359	....
" " 1915	1,089,267	40,596	25,061	13,856	603,279	....

* 18,000 cantars to Port Said via Japan deducted.

Great Britain is not able to get from America anything like the quantities of cotton she usually takes and all the cotton that arrives over there is held for domestic consumption. It is, therefore, practically certain that America's supply of Egyptians will run very short before the season is over.

Sea Island

The Sea Island cotton market has been quiet, but large buyers are now in the market again and are reported to be paying 74 cents, first cost Savannah, for average Extra Choice. There is, however, very little cotton for sale at that price.

It now appears that the Sea Island crop will be smaller than was expected.

Yarns

The demand for cotton yarns continues to be steady and spinners are unchanged

SEA ISLAND CROP MOVEMENT
From August 1, 1917, to November 30, 1917

	Receipts 1917-18	Receipts 1916-17
Stock on hand, Aug. 1, 1917—Savannah, 1,043; Charleston, 1	1,044	2,508
Received at Savannah (Gross)	14,922	32,874
Received at Charleston	3,225	1,465
Received at Jacksonvill	15,297	23,567
Received at Brunswick	Nil	Nil
Received at Norfolk	?	?
Total	34,488	60,354
Less Exports	*22,570	51,701
Stock Nov. 30, 1917—Savannah, 9,897; Charleston, 2,021	†1,918	8,653
Crop in sight at all ports to date	33,394	57,822

in their attitude toward the market. Many of them have booked all the business they can handle within the next four months. It is reported that production is below the capacity of the mills, due to the labor problems that are growing more troublesome, particularly among small yarn mills. Quotations are quite irregular.

Fabrics

It is reported in the fabric trade that many orders are unfilled, largely because the mills do not care to acept contracts pnder present conditions. There has no doubt been a great deal of buying of a speculative character and as a result many are not at all satisfied with the safety of the present position of the markets. Conditions, however, may continue to force the market upwards, yet it must be remembered that many of the goods now contracted for will never be used by those who have purchased them. A market reaction can bring back to the trade from second hands many of the goods nominally purchased.

Tire Fabrics

The tire fabric market is exceptionally quiet and there is a great variation in quotations. Many tire manufacturers find that they have over-bought and orders are being cancelled in many instances. Some manufacturers who find themselves with large quantities of fabrics on their hands are selling at prices that are far below present market values. As a result the market is much disturbed.

As to the future of the supply of tire fabrics, mill men believe that there will be a serious shortage of these materials before the season is over, in spite of the curtailing in the output of most tire factories. Egyptian cotton will be very scarce and the supply of Sea Island will not be large enough to make up for the shortage.

Hose and Belting Fabrics

Hose and belting duck houses have little or no goods to sell and are under government restriction in selling the small yardage they have available.

The serious shortage of heavy cotton ducks in this country has caused the War Industries Board to issue an order to all manufacturers of these materials to limit their sales in heavy "ply" goods until further notice to concerns holding certificates from the Priorities Committee approving their duck purchases.

Drills, Osnaburgs and Sheetings

The demand for heavy sheetings, drills and osnaburgs continues, and buyers are reported to be paying willingly premiums when spot deliveries can be given. In some instances purchasers are placing contracts, to which spot deliveries are contingent.

Garment Cloths

Cloth markets are firm, but rather more quiet than is usual at this season. There has been a great deal of purchasing in anticipation of big Government needs for military purposes, and this, perhaps, is the cause of the present quiet situation. The probability of tight money is also a factor in the calculations of many merchants, who hesitate to buy at present high price levels.

Burlaps

Burlaps are quiet and very high. Only concerns that are in urgent need of goods are operating on the spot market. In many instances prices quoted are purely nominal.

Advices from Calcutta report a strong market there, though a recession is likely to occur owing to the lack of shipping facilities and the price-fixing measures that are expected to be taken at Dundee.

It is reported that the Cleveland & Akron Bag Co., Cleveland, Ohio, has started the manufacture of a substitute for burlaps for covering bales of merchandise. The new material is called "Saxolin"; it is 40 inches wide and is a sort of waterproof paper. The price of this new material is less than half that of burlap, has the advantage of being impervious to water and is claimed to have as high breaking strength as burlap.

NEW YORK QUOTATIONS

TIRE FABRICS.

17¼-ounce Sea Island, combed, sq. yd.	$1.62@1.73
17¼-ounce Egyptian, combed..	1.24@1.60
17¼-ounce Egyptian, carded.....	1.30@1.35
17¼-ounce Peelers, carded.....	0.75@1.13
17¼-ounce Peelers, combed.....	1.00@1.05
American Carded Staple, 12 to 20 yard, per lb. (pound basis)	.65
American Carded Staple, 8 to 10 yard, per lb. (pound basis)	.65

MECHANICAL DUCKS

Hose (nominal)	0.58@ .60
Belting (nominal)	0.57@ .60

DUCKS

Single Filling (pound basis).....lb.	.52
Double Filling (pound basis).....	.58

DRILLS

37-inch 2.35-yard.....yd.	.24
37-inch 2.75-yard.....	.20
37-inch 3.00-yard.....	.18½
37-inch 3.25-yard.....	.17½
37-inch 3.50-yard.....	.16½
37-inch 3.95-yard.....	.14¾
38-inch 2-yard Southern.....lb.	.49
38-inch 2.00-yard Northern.....	.52
40-inch 2.47-yard Northern.....yd.	.21
40-inch 2.47-yard Northern.....	.25
52-inch 1.90-yard Southern.....	.27
52-inch 1.90-yard Northern.....	.28¼
52-inch 1.95-yard Southern.....	.26½
52-inch 1.95-yard Northern.....	.28
60-inch 1.52-yard Southern.....	.33
60-inch 1.52-yard Northern.....	.33

SHEETINGS

40-inch 2.35-yard.....yd.	.22
40-inch 2.50-yard.....	.22
40-inch 2-85-yard.....	.19
40-inch 3.00-yard.....	.16½
40-inch 3.25-yard.....	.17
40-inch 3.60-yard.....	.16
40-inch 3.75-yard.....	.15
40-inch 4.25-yard.....	.14½
38-inch Jacket Cloths.....yd.	.19-.21

TWILLS FOR PROOFING

37-inch 2.85-yard.....yd.	.19½
37-inch 2.35-yard.....	.24
37-inch 2-10-yard.....	.27

COTTON STOCKINETTES (52-inch.)

E—11½-ounce .....yd.	.75
A—11 -ounce	.50

BURLAPS

(Spot Carload lots.)

40-inch 8 -ounce.....	$17.00
40-inch 10 -ounce.....	21.50
40-inch 10½-ounce.....	22.00

Chemicals and Compounding Materials

NEW YORK, Dec. 6, 1917.

The movement of chemicals and compounding materials into consuming channels is fairly active. Interest centered in the announcement made by leading producers of zinc oxide establishing new contract prices for the first quarter of 1918, effective Jan. 1. Horsehead brands of zinc oxide for the rubber trade for January-March shipment are now offered at 10¾c for the special and 10¼c for the XX, the prices being unchanged compared with the previous schedule. French process zincs, however, have been reduced to the extent of 1c per pound. Heavy calcined magnesia is held at 11c for contract and 12c for spot delivery by prominent factors. Sulphur quotations closed firm, but quotably unchanged. There was little if any change in the position of antimony sulphurets. Aniline oil closed lower, while caustic soda also sold at easier prices. Nitric acid is strong and prices for all grades show a higher range. Lagos palm oil is exceedingly scarce and prices established new high records for the year. Turpentine is easier.

ANTIMONY SULPHURETS

Prominent handlers report a good outlet for sulphurets and prices for practically all grades are being firmly maintained. The advance in basic materials has not yet influenced the ideas of sellers. Red sulphuret closed at 25 to 26c per pound, contract, with the golden at 28 to 32c, as to brand, and the crimson at 45 to 50c.

ANILINE OIL

Competition tends to unsettle the market. The demand for aniline oil is rather inactive and sales went through at 26c per pound, a decline of 1c from the inside basis of a fortnight ago. Producers quote the market at 26 to 28c, drum extra.

BENZOL

Several large contracts for 1918 shipment were closed during the interval at 40 @ 42c per gallon for pure benzol. Spot quotations held at 45 @ 47c per gallon, in tanks f. o. b. works. Production in some quarters has been curtailed somewhat on account of the coal shortage and this developed a firmer feeling.

CALCINED MAGNESIA

Leading handlers report that the market on standard brands is firmer. Heavy calcined magnesia closed at 11c, contract, and 12c per pound, spot delivery. Light calcined magnesia is held at 70c per pound.

CAUSTIC SODA

Since export business has been curtailed the market is easier. The demand for caustic soda in a domestic way is less active and towards the close there were sellers of 76 per cent for spot delivery at 7¾ @ 8c per pound. Second-hands quote 6½c on 1918 shipments.

LEAD PIGMENTS

The market for the lead pigments was quiet, but prices closed practically unchanged in all quarters. Corroders offer standard dry white lead at 9c per pound, round-lots, with the sublimed at 8½c per pound Red lead held at 10 @ 10½c. Litharge closed nominally at 9½ @ 10c per pound. Lithopone for shipment over the first quarter of 1918 is held at 6½c by producers.

SULPHUR

There is a firm market for refined sulphur. Leading interests quote the market unchanged on the basis of $3.85 per 100-pounds for the flour, in car-lots. Stocks on hand are moderate.

ZINC OXIDE

Producers announced a new schedule of prices for shipments extending over the first quarter of 1918. Contrasted with the previous schedule the prices for horsehead brands are unchanged, while prices for the French process zincs are 1c lower. Horsehead zinc oxide for the rubber trade is quoted at 10¾ @ 11c per pound for the special grade, and 10¼ @ 10½c per pound for the XX. French process, white seal, is quoted at 14 @ 14¼c, with the red seal at 13 @ 13¼c per pound.

Prices Current for Chemicals, Fillers, Colors, etc.

Acetone ..... lb.	.35	@	.36
Acids, Acetic, 28%..... lb.	.07	@	.07½
Carbolic, C. P.... lb.	.53½	@	.55
Cresylic, 95%.... gal.	**1.05**	**@**	**1.10**
Muriatic, 20 deg.. lb.	.02	@	.02¼
Muriatic, 22 deg.. lb.	.02½	@	.02⅝
Nitric, 40 deg.... lb.	.08½	@	.08¾
Nitric 42 deg.... lb.	.09¼	@	.09½
Sulphuric, 60 deg. lb.	.01¾	@	.02
Tartaric, crystals. lb.	.78½	@	—
Aluminum Flake ..... ton	22.00	@	24.00
Aniline oil ..... lb.	.26	@	.28
Antimony, metal, spot... lb.	15.25	@	15.50
Oxide ..... lb.	16.00	@	17.00
Sulphuret, red.... lb.	.25	@	.26
Sulphuret, golden.. lb.	.28	@	.30
Sulphuret, crimson. lb.	.45	@	.48
Asbestos ..... ton	40.00	@	60.00
Asphaltum, Egyptian.... lb.	**.20**	**@**	**.25**
Domestic ..... ton	**18.00**	**@**	**25.00**
Barium sulphate, technical ..... lb.	.04¼	@	.04¾
Chloride ..... lb.	.04½	@	.05
Barytes, prime white imported ..... ton	38.00	@	40.00
white, domestic.. ton	28.00	@	32.00
off color, domestic. ton	18.00	@	22.00
Benzol, pure ..... gal.	.45	@	.50
Beta-naphthal, sublimed.. lb.	.85	@	.90
unsublimed ..... lb	.65	@	.70
Blacks, Drop..... lb.	.07	@	.12
Ivory ..... lb.	.16	@	.30
Carbon gas..... lb.	.24	@	.30
Lamphlack R. M.. lb.	.04½	@	.06
Mineral blacks.... ton	24.00	@	28.00
Blues, Prussian ..... lb.	.65	@	1.35
Soluble (potash).. lb.	1.45	@	1.75
Ultramarine ..... lb.	.18	@	.35
Browns, Umber, Turkey, burnt, powdered ... lb.	.04	@	.05
American, burnt. lb.	.03	@	.03½
Cadmium sulphide, yellow. lb.	2.25	@	2.50
Carbon bisulphide, bulk.. lb.	.07½	@	.08
tetrachloride, drums. lb.	.16½	@	.17
Caustic Soda, 76@78%.. lb.	.07¾	@	.08¼
Chalk, precipitated, extra light ..... lb.	.05	@	.05¾
light ..... lb.	.04¾	@	.05¼
heavy ..... lb.	.03¾	@	.04¼
China clay, domestic.... ton	18.00	@	22.00
imported ..... ton	25.00	@	35.00
Fossil flour ..... lb.	.06	@	.10
Gilsonite ..... ton	40.00	@	44.00
Glue, extra white..... lb.	*.28	@	.38
medium ..... lb.	*.25	@	.28
low grade.....	*.22	@	.25
Glycerine, C. P. (drums).. lb.	.70	@	.71
Graphite, flake (bbl.).... lb.	.15	@	.20
powdered (bbl.).. lb.	.10	@	—
Green, chrome, R. M.... lb.	.12	@	.20
Ground glass (fine)..... lb.	.03	@	—
Hexamethylene ..... lb.	.75	@	.80
Infusorial earth, powd'd. ton	60.00	@	—
bolted .... ton	70.00	@	—
Iron oxide, red, reduced grades ..... lb.	.04	@	.05
red, pure, bright.. lb.	.12	@	.14
Lead, red oxide of..... lb.	.10	@	.10½
sublimed blue .... lb.	.08½	@	.09
white, basic carb.. lb.	.09	@	.09½
white basic sulph.. lb.	.08½	@	.09
Lime flour ..... lb.	.01½	@	.01¾
Litharge ..... lb.	.09½	@	.10
English ..... lb.	*.12	@	.13
sublimed ..... lb.	.09¼	@	.09¾
Lithopone, domestic .... lb.	.06½	@	.07
Magnesia, carbonate .... lb.	.12	@	.14
calcined, heavy... lb.	.12	@	—
Calcined, light... lb.	.70	@	—
Magnesite, calcined, pwd. ton	65.00	@	70.00
Mica, powdered ..... lb.	.03¾	@	.05
Mineral rubber (asphaltum base) .... ton	**40.00**	**@**	**60.00**
Naphtha, motor gasoline, (steel bbls.)...gal.	.24	@	—
68 @ 70 degrees (steel bbls.)...gal.	.30	@	—
70 @ 72 degrees (steel bbls.)...gal.	.31	@	—
73 @ 76 degrees (steel bbls.)...gal.	.33	@	—
machine (wood bbls.) gal.	.41	@	—
Oil corn, crude.....cwt.	18.50	@	—
corn, refined.....cwt.	*20.61	@	—
linseed (bbl.).....gal.	1.20	@	1.22
palm, Lagos ..... lb.	*.28	@	.29
pine, yellow .....gal.	.44	@	.45
rapeseed, refined..gal.	1.65	@	1.70
rapeseed, blown....gal.	1.70	@	1.75
rosin, first rectified.gal.	.42	@	.43
tar (commercial)..gal.	.30	@	.32
Orange mineral, American. lb.	.13	@	.13½
imported ..... lb.	*.15	@	.20
Petrolatum, bbls., amber. lb.	.04¾	@	.05
pale yellow ..... lb.	.05	@	.05⅛
Pipe, tar ..... bbl.	14.50	@	14.75
Pitch ..... bbl.	4.00	@	4.75
Plaster of paris..... bbl.	2.00	@	2.50
Red, Tuscan ..... lb.	.25	@	.30
Indian (reduced).. lb.	.06	@	.08
Standard ..... lb.	.08	@	.11
Rosin (common to good), @ 280 lbs.....bbl.	6.95	@	7.05
Rotten stone, powdered.. lb.	.02¾	@	.04¼
Rubber substitute, Black. lb.	.11	@	.15
white ..... lb.	.14	@	.16
brown ..... lb.	.16	@	.17
Shellac, fine orange..... lb.	.66	@	—
T. N. ..... lb.	.59	@	.60
Bleached, ordinary.. lb.	.56	@	—
Bleached, bone dry.. lb.	.66	@	.67
Silex (silica) ..... ton	24.00	@	34.00
Soapstone, powdered ...ton	12.00	@	20.00
Starch, corn, powdered.. lb.	.05¾	@	.06½
Sulphur, crude .....ton	45.00	@	50.00
refined, flour, per 100-pounds, ...in bbls.	3.85	@	4.40
roll	3.70	@	4.15
commercial	3.35	@	3.65
Talc, American .....ton	12.00	@	16.00
French .....ton	22.00	@	30.00
Toluol, pure, in drums..gal.	*2.25	@	2.50
Tripolite earth .....ton	**60.00**	**@**	**65.00**
Turpentine, pure gum— spirits .....gal.	.49	@	.49½
wood .....gal.	.38	@	.40
Venice, artificial..gal.	.12	@	13
Vermilion, English.....lb.	**1.90**	**@**	**2.10**
Wax, beeswax, crude yel. lb.	.35	@	.37
ceresin, white ....lb.	.18	@	.19
carnauba, No. 3...lb.	.48	@	.49
Montan ..... lb.	*.35	@	.40
Wax, ozokerite, black....lb.	.75	@	.80
ozokerite, green...lb.	*.85	@	.95
Paraffin, refined, 118/120 M.P. (bbls.) ....lb.	.10½	@	.11
123/125 M.P. .....lb.	.11⅜	@	.11⅝
128/130 M.P. .....lb.	.11⅜	@	.11¾
133/136 M.P. .....lb.	.12¾	@	.13
Crude, 117/118 M.P..lb.	.08¼	@	.08½
124/126 M.P. .....lb.	.08½	@	.08⅝
Whiting, commercial...cwt.	**.95**	**@**	**1.10**
Alba .....cwt.	1.00	@	—
Paris, white, American .....cwt.	**1.25**	**@**	—
English cliffstone. cwt.	**1.50**	**@**	—
Yellow chrome .....lb.	.22	@	.28
Zinc oxide, American process, horsehead brand..lb.	†.10½	**@**	**.10⅛**
selected .....lb.	†.10⅝	**@**	**.11**
" XX red ".....lb.	†.10¼	**@**	**.10½**
French process, green seal .....lb.	†.13½	@	.13¾
red seal .....lb.	†.13	@	.13½
white seal .....lb.	†.14	@	.14¼
Zinc substitutes .....ton	30.00	@	35.00
Zinc, sulphide, pure.....lb.	*.07½	@	.08

†Contract prices. *Nominal.

The Crude Rubber Market

NEW YORK, Dec. 6, 1917.

Forced liquidation by weak holders sent prices for crude rubber to the lowest point attained since the outbreak of the war in August, 1914. The liberal importations witnessed during the last quarter of the year more than offset the many disturbing influences, which under different conditions would have sufficed to create a decided upward movement in the market. As usual the weakness in prices served to check buying operations by consumers, and throughout the fortnight under review the transactions noted consisted chiefly of covering by short interests. Closing prices for practically all grades of plantation rubber show a loss of 4c a pound, while the Brazilian grades went off to the extent of 2 and 2½c a pound. Some improvement was noted in the volume of inquiries coming from manufacturers. Many in the trade believe that prices are "close to bottom."

London prices also went off on lack of support. First latex pale crepe closed nominally at 29¾*d* per pound, prompt shipment, which compares with 30¼*d* a fortnight previous. Smoked sheets, ribbed, were cabled at 2*d* per pound, contrasted with 29½ @ 29¾*d* two weeks ago.

The fact that our Government will require licenses of importers to import crude rubber and substitutes failed to influence the market. Control of imports of rubber has been in force in some form or other ever since the outbreak of the war and traders believe that our Government has no intention of restricting the movement of this important commodity.

First latex actually sold down to 53c per pound to-day; but this was not an open market price. Most dealers continued to quote 54c, which compares with 58c on Nov. 22. First latex pale crepe for January-March shipment closed nominally at 54½c, with April-June at 55c. Operators were not anxious sellers in the far off positions. In one quarter 55c was named as a price covering second-half of 1918 delivery. Ribbed smoked sheets on the spot closed at 52½c.

The arrival of another fairly large cargo of Brazilian rubber was reported and with plantation grades easy prices closed lower. Para up-river fine settled at 53½c per pound, and on January-March 52½c might have been done. The fact that Russia is no longer a buyer of Brazilian rubber tends to depress the market. Up-river coarse closed at 36c, with Caucho ball at 34c per pound.

Centrals closed on the nominal basis of 35c for Corinto and 34c for Esmeralda. Guayule was reduced to 26 @ 27c per pound.

	Spot.	Jan.-Mar.	Apr.-June.
Para—Up-river fine..... lb.	53½	52½	..
Up-river medium	48	48	..
Up-river coarse	36	35½	..
Caucho ball	34	34	..
Islands fine	45	45	..
Islands coarse	25	25	..
Cameta	25	25	..
Madeira fine	57	..	..
Ceylons-Smoked sheets, ribbed	52½	52½	53
Smokers sheets, plain.....	51	52	52½
First latex pale crepe.....	54	54½	55
Amber crepe	51	51½	52½
Clean brown crepe.....	50	50½	50½
Centrals—Corinto, prime.....	35	35	..
Esmeralda, prime	34	34	..
Mexican scrap	33	33	..
Balata, sheets	81	..	..
Balata, block Panama.....	55	..	..
Guayule	26	26	..
Africans—Rio Nunez, string..	*62	..	..
Massai, red	48	48	..
East Indian Pontianak.....	12	12	..
Palembang	12¼	12¼	..

* Nominal.

Scrap Rubber

NEW YORK, Dec. 7, 1917.

Buying in the scrap rubber market continues on a limited scale. The general tone of this market is easy and there are no quotable price changes to announce.

The following prices were paid for scrap rubber delivered at the reclaiming mill:

Boots and shoes.....	9@ 9¼
Arctics trimmed	7 @ 7¼
Arctics, untrimmed.....	6 @ 6¼
Tires—Automobiles	5½@—
Bicycles, pneumatic	4¾@ 5
Mixed hose	2½@ 2¾
Air brake	5½@ 5¾
Inner tubes, No. 1.....	20¾@21
Inner tubes, No. 2.....	10¾@11
Red	10¾@11

News of the Dealers

Nabor & Cole Vulcanizing & Tire Co., Frederick, Okla., has installed a steam vulcanizing and retreading plant of the latest model.

Kiowa Vulcanizing Co., Kiowa, Okla., has moved into a new building.

Brown & Lurwick, Baxter Springs, Kans., have bought the Interstate Vulcanizing Co.

Standard Tire & Rubber Co., Kansas City, Mo., has opened for business at 1604 Grand Avenue.

Dixie Garage, Holly, Mich., operated by J. R. Inskeep, is now open with a full line of tires and accessories.

TIRE NEWS

Building Tire Business*

By F. I. Reynolds

of the United States Tire Company

An additional year's experience with the mutual cooperation which many members of this Association have given us, in an endeavor to work out and perfect a plan of distributing tires through the wholesale hardware merchant has served, confirmed and emphasized many of the things that I said a year ago. That the hardware trade is not more generally in control of the distribution of the tires and accessories that go with the equipment of an automobile and the renewal of that equipment is largely due to their indifference, inadertence or some other sort of lack of appreciation of opportunity.

A more or less general adoption of the automobile as a means of transportation affected most seriously the industry built up around the driving of a horse. The hardware, the woodenware and many of the trimmings that were necessary to the horse-drawn vehicle had their distribution through the wholesale hardware man; much of the saddlery that were also requisites also had distribution through the wholesale hardware man, and the adoption of the automobile displaced the driving of the horse more than any one thing and affected most seriously the line of industries that surrounded that means of transportation. In other words, the adoption of the automobile practically drove out of existence the demand for the saddlery and vehicle supplies that went with the driving of the horse, and the hardware man lost the business.

Apparently he did not appreciate the fact that he, through the loss of one industry, was giving up a large portion of his volume and was not preparing to replace that portion of his business with a new industry. This lack of notice of a loss of a portion of his business, and his indifference to such, and his attitude toward the automobile industry, may have been due to the same one thing which we have noted most particularly during the past year, in connection with the wholesale hardware man's business, and that one thing is the inclination to group his lines instead of

F. I. Reynolds

studying the relative importance of each of them.

Many wholesale hardware houses, if they do a million dollars' worth of business a year and earn a given profit on a million dollars' worth of business, do not know whether they are marketing some lines at a profit and the other lines at a loss. They do know generally whether or not their business as a whole pays them a profit. But whether or not their business as a whole would be more profitable if they were to drop certain lines that show them long percentage margins and concentrate more seriously upon other lines that show a shorter percentage of profit, but a greater actual profit, because of the difference in the cost of handling the business is the thing which they do not know.

I recall very readily that the Secretary, Mr. Fernley, made the statement more frequently than twice during the meeting last year that it cost the wholesale hardware man from 16 to 17 per cent to do business. To me at that time it was a startling statement, because we in our business have found it absolutely necessary to departmentalize and find out what the different lines cost us to make and to market, in order to find the price which we should require for those goods.

An investigation shows me, however, that there are many hardware houses who are buying goods at fixed market valuations and selling them at equally fixed market valuations, without knowing how much cost was imposed upon them in the marketing of any one particular line itself, but applying the general average as a basis of cost against all lines. Which illustrates to me very clearly the reason for wholesale distributors largely turning to special brand products in place of universal brand products.

We are speaking particularly of tires, but the studies that I have made of this situation apply equally to all products that have a fixed unit, a fixed value and a reasonably universal demand. Special branded products in this general class have but one real recommendation and that is the opportunity of loading the price to the consumer to an extent that misleads the consumer as to value.

This object can be reached in two ways: one by increasing the price above the normal; the other by degrading the quality below the normal. The result to the consumer, however, is the same, for he pays for more than he gets for his expenditure. The marketer does not gain even relatively, for he shortens his market, and while he can show a greater percentage of profit on the volume of business done, the number of dollars returned in profit are not commensurate with the effort and expense necessary, nor does he build a reputation of value returned to his customers.

* Address delivered at convention of American Hardware Manufacturers' Association and the National Hardware Association.

And, after all, the great advantage that you men have in your business that gives you the supremacy that you possess, is not your capital, for that can be duplicated many times over; it isn't your tremendous warehouses, for they could be rebuilt if they were destroyed; it isn't your large stocks of goods, because they can be bought with a duplication of capital. What you men have that makes your predominance in this business, that makes the National Association of Hardware Men a great institution, is your good-will, your reputation to the dealer, and through the dealer to the consumer, of providing the means by which the consumer can get the greatest possible value for the expenditure of his money. That makes you what you are.

Your hope to grow greater is dependent upon serving a greater number of people. You can only gain that greater number of people by increasing the widespread reputation for excessive benefits from the purchases made of you.

I shall point out some instances that have come to my attention that prove, in the tire business, the application of these thoughts.

I know of one or two large wholesale hardware houses east of the Mississippi River that launched themselves in the tire business two or three years ago who were attracted to a very high priced tire, which carried a long margin of discounts and had a presumably long standard of guarantee to justify the high nominal price. They were fairly successful in marketing these goods for the first year they were engaged in the tire business. The tires barely, if ever, reached the expected mileage, and the wholesale hardware house was forced to establish a chain of exchanges for which they had no facilities.

The inconvenience to the user in returning the tire to the dealer, the dealer in turn to the wholesaler and the wholesaler in many cases referring it to the factory before the user received relief, made a chain of bad feeling that endangered, if it did not injure, the whole business of that wholesale hardware house.

When we met them we found a condition of antagonism between the users and the dealers, the dealers and the house, and the dealers with the salesmen, which resolved itself into the salesmen refusing to sell any more tires until re-educated from the proper standpoint.

We found another case, or several cases, west of the Mississippi where wholesale hardware houses had made arrangements with a manufacturer of tires priced at an average standard price for tires to the user, guaranteed at about the normal or standard guarantee with a long line of discounts which made the net cost to the wholesaler so low that the possibility of profit looked very attractive.

When we met this concern after a year's effort or more we found their salesmen and their dealers entirely disheartened and disgruntled, and together with the people who had been purchasing tires from their dealers, firmly of the belief that it was impossible for the hardware house to distribute tires.

It would be unseemly of me to criticise any tire manufacturer for his methods of doing business. To him, his policies are acceptable and approvable, and, I naturally infer, are satisfactory.

I have no doubt that the man who makes a highly priced tire with a longer nominal guarantee in mileage can secure a distribution for such product, if it is made through dealers who should be expert tire men only, with the proper facilities for serving the user of his product.

I have no doubt that the maker of a sub-standard tire can find proper means of outlet for his products that will enable him to reach a class of trade to whom he desires to cater among users of tires, and that there is such trade I have not the slightest doubt; but I am prepared to say emphatically that this type of manufacturer is injuring himself and most pronouncedly injuring the wholesale hardware dealer, and the retail hardware man's opportunity to distribute tires, if he misleads him into handling tires of either of these types and through either method.

Your success in marketing tires must be based upon a standard grade product, priced fairly, guaranteed normally, solely because your opportunity to specialize in any one of the hundreds of articles which you market does not exist. You cannot afford to sacrifice your reputation for marketing good goods in the interest of any manufacturer's special effort to promote his particular product in his particular way.

Your biggest asset is your goodwill with your trade, and that is based upon your reputation of marketing good products and selling at fair prices to those who are dependent upon you for their daily needs.

Uniformity in Tires

Why don't all four tires of the same kind render uniform mileage? Put four of a kind on at the same time, each being submitted to the same conditions, and no two give the same mileage. Why should one outlive or live up to the mileage expected of it and not the other?

This was the pertinent trend of a recent conversation with F. C. Millhoff, general sales manager of The Miller Rubber Co., Akron, Ohio, in reviewing the progress made in the tire industry.

Tires that are uniformly made, he said, will and do give uniform mileage. Uniformity must prevail from the very first operation. First the decision to have positive uniformity, then the courage and ability to go out into the factory and apply it.

One by one the variables must be eliminated, both in buying and in manufacturing. For example, the word of the mills alone is not enough in buying fabric. Fabric is what the carcass, the foundation of the tire, is made of. A single weakness in it, a dropped strand in the weaving, or a break invisible to the eye, would not be discernible in the tire when sold, but would likely make its appearance later in the form of a blowout.

Careful, scientific testing of the fabric will reveal these weaknesses and then the chaff may be separated from the wheat resulting in uniformly perfect fabric.

Again, there is the importance of uniformly laying this fabric in building the carcass. Doing this by hand was not uniform. In the morning, fresh and rested, the workman could possibly meet the rigid requirement of uniformity. As the day progressed, however, his energy waned, his grip slowly but surely relinquished, and a variation resulted. Machinery was the thing for work so exacting, work requiring uniform precision in stretching and laying each and every layer of fabric exactly right.

Uniformity in vulcanization must prevail also, must be a religion. The temperature must be maintained uniformly low throughout the vulcanization or curing process. Overcuring is disastrous as it results in the carbonization of the native oil and wax which is the life-blood of the fabric. Deprived of this natural lubricant, the fabric is brittle and lifeless and unable to discharge the tremendous responsibility it must assume.

Uniformity in every last one of these things will mean not only uniform but the maximum mileage. It's no easy matter to perfect methods so that this may be brought about, but it can be and has been done.

When Experts Design Windows

"JOHN" & "JIM" RINGLING BRO'S. BIGGEST TUSKERS TESTING THE STRENGTH OF A
GOODRICH INNER TUBE
PUT THE WONDERFUL TENACITY & STRENGTH OF GOODRICH TUBES TO WORK IN YOUR TIRES
GOODRICH INNER TUBES
BEST IN ANY CASE
GOODRICH INNER TUBES
BEST IN ANY CASE

Fashion Camera Studios

Items of Interest to the Tire Trade

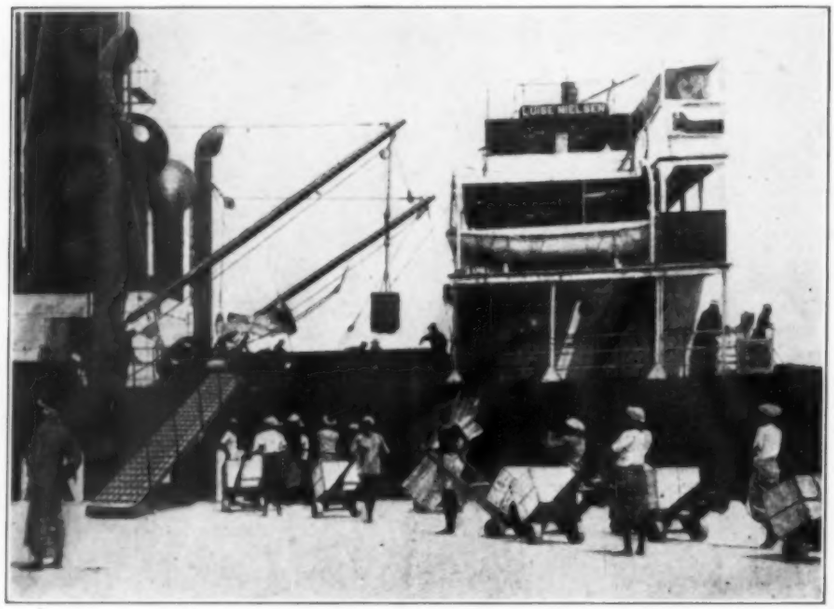
Firestone's New Wheel Sales Policy—Coach Company's Report—Sebring Plans Additions—Doss Rubber to Locate in the South—New Tire Fabric Company—Goodyear Guidon on Battlefront—Matlack Elected President of Globe Rubber

New Firestone Wheel Sales Policy

A new policy in the sale of demountable rims and wheels for Ford cars, which has been adopted by the Firestone Tire & Rubber Co., Akron, Ohio, has already found favor with the jobbers throughout the country.

Formerly these sales have been made through Firestone branches to both jobbers and retail dealers. Under the new plan the Firestone Co.'s sales-force will still push the sales of wheels equipped with Firestone demountable rims, but their orders will be turned over direct to the jobbers, who thus hold control of a much larger and better market. The sales campaign, aided by the national advertising of the company, brings the trained experts of the manufacturer to the direct aid of the individual jobber.

"From reports we have already received, we believe that this new plan will be extremely successful," comments A. G. Partridge, general sales manager of the company."



THE LARGEST SHIPMENT OF RUBBER EVER MADE TO ONE FIRM

Loading the largest shipment of crude rubber ever consigned to an American firm. It came across the Pacific, from Singapore to Seattle, for the Goodyear Tire & Rubber Company, Akron, Ohio. This shipment consisted of 25,000 cases of plantation rubber, weighing 1875 tons, valued at nearly $3,000,000.

Report of Fifth Avenue Coach Co.

The annual report of the Fifth Avenue Coach Co., which operates buses on Fifth Avenue, Broadway, Riverside Drive, and other streets in New York City, shows a surplus on the company's balance sheet of $1,274,823 as a result of operations for the fiscal year ending June 30, 1917. This is almost twice the surplus of last year, and may be attributed partly to a considerable increase in bus mileage and partly to greater efficiency in operation.

Of particular interest in the report is the item of tire expense. During the first year of the system, tire cost was 4.98 cents per mile. During the second year it was 3.13 cents a mile. Then the cost dropped to 2, 1.7 and 1.504 per mile, and in the year 1916 it was 1.097 cents per mile. Last year it was only 0.79 cents per mile, a remarkably low figure.

The tires used on the Fifth Avenue buses are subjected to very hard service. The stops are frequent and hard and the buses heavy, and the tires show the result. For the past two years, tires have been bought by the company on a basis of guaranteed mileage, and the arrangement, as carefully worked out between the tire manufacturers and the company, has been mutually profitable. It is interesting to note that tire cost is next to the lowest single item of expense, the lowest being 0.49 cent. per mile for traffic advertising. According to the report, the total operating expenses amounted to 28.89 cents per mile while the total revenue was 38.3 per mile.

Sebring Planning Additions

The Sebring Tire & Rubber Co., Alliance, Ohio, is planning the erection of two new buildings and an addition to its main building. It is expected that the improvements, which will be completed about Feb. 1, will increase the capacity of the plant from 150 to 500 tires a day.

Tire Factory for Georgia

The Doss Rubber & Tube Co. will locate its plant at Fort McPherson, near the new factory of the Hanson Motor Car Co. Work has been started. The company has purchased enough ground to build eight more buildings. The new building will contain 20,000 ft. of floor space and will be capable of turning out 1000 tubes and casings per day. Dr. C. F. Doss is president; T. J. Davis, vice-president, and W. B. Stovall of Atlanta secretary and treasurer.

R. B. Crane Joins Racine Rubber

R. B. Crane, former sales manager of the Double Fabric Tire Co., has been appointed manager of the sundries division of the Racine Rubber Co., Racine, Wis.

Temporary Ajax Branch

The Ajax Tire & Rubber Co. has established temporary branch quarters at the Porritt block, corner N. P. Avenue and Fifth Street, Fargo, N. D.

New Tire Fabric Company

With a capital stock of $250,000 the New England Tire Fabric Co. of Worcester, Mass., has been incorporated to manufacture tire fabrics, and will employ a patented process for the manufacture of yarn and cloth fabrics. The officers of the company are: Joseph W. Hawks, president; Williard W. Lombard, treasurer.

Portage Branch Moves

The Des Moines, Ia., branch of the Portage Rubber Co., Barberton, Ohio, has moved into its new quarters at 1009 Locust Street. E. A. Jacobs is district manager.

Goodyear Guidon on Battlefront

Provisional Motorcycle Company No. 1 with General Pershing somewhere close to the battle line in France has with it a guidon presented by the Goodrich Tire & Rubber Co.'s El Paso branch as a squad flag to distinguish its group from others. It is a silk flag four feet long and two feet wide, in the centre of which is an embroidered motorcycle wheel with the winged foot emblazoned across the hub. The flag was presented to the motorcycle company when it was stationed along the border during the difficulties with Mexico a year ago and was always taken with them on troop manoeuvres or military forays.

Goodyear Declares Dividend

The Goodyear Tire & Rubber Co., Akron, Ohio, has declared its regular quarterly dividend of 3 per cent on its common stock. It is payable Dec. 1 to stock of record Nov. 20.

Kelly-Springfield Branch Moves

The Youngstown, Ohio, branch of the Kelly-Springfield Tire Co., Akron, Ohio, has been located at Ridge Avenue and Market Street since Dec. 1.

Matlack Elected President of Globe Co.

J. C. Matlack, formerly secretary and general manager of the Ajax Rubber Co., has been elected president of the Globe Rubber Tire Manufacturing Co., Trenton, N. J. After his recent retirement from the Ajax Co. and prior to his new connection, Mr. Matlack was associated with the American Writing Paper Co. Mr. Matlack will have his headquarters at the company's New York offices.

Shaw Director of Recreation

E. G. Shaw, general manager and vice president of the B. F. Goodrich Co., Akron, Ohio, is director of welfare and recreation for all Ohio troops, having been appointed by Governor Cox.

David M. Goodrich Appointed Major

David M. Goodrich, a director of the B. F. Goodrich Co., has been commissioned a major of infantry. Mr. Goodrich is also president of the Rough Riders Association and was one of the most active workers in the effort to form Colonel Roosevelt's division early in the war.

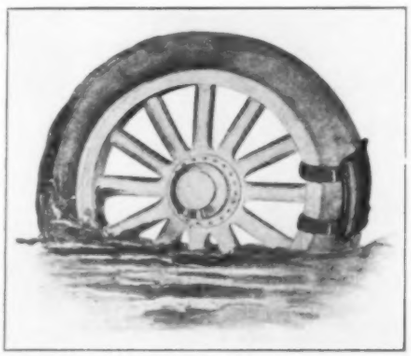
Tires and Accessories

Nelson-Bacon Marketing a New Mud Shoe (Terwedo) for Automobile Tires —Brictson's Pneumatic Tire with Detachable Tread—Rubber Mallets for Factories and Garages—Bukolt Highway Tire Protectors

Terwedo Auto Mud Shoe

For the motorist, whose car has been stuck in snow or mud and has had to resort to the use of crow-bars or boards to help him out of his predicament, a new mud shoe has been recently marketed. This device is known as the "Terwedo Auto Mud Shoe."

This is a small, but valuable accessory, which can be conveniently carried in the



TERWEDO MUD SHOE ON TIRE

tool box or under the seat. It is made of hard pressed steel, pressed into shape over a forming die. It has a lifting surface of seven inches across under the tire and seven inches the other way. The under surface is concaved, thus causing the dirt or snow to be pushed into the rut and holds it there while the car passes over the shoe, at the same time gradually raising the car out of the rut with each turn of the wheel.

The traction flanges on the shoe are seven inches wide and one inch deep and the projection of the shoe beyond the sides of the tire gives greater traction power than if they were of the same width as the tire.

The shoe is easily attached by means of four web straps, which will take up the slack, and is fitted with patent buckles, making it easy to loosen. The method of applying the shoe to the tire is clearly shown in the accompanying illustration. The shoe is manufactured by the Nelson-Bacon Manufacturing Co. of Oshkosh, Wis.

The Brictson Pneumatic Tire

A new tire recently placed on the market is the Brictson, made by the Brictson Manufacturing Co., Brookings, S. D. It is made with a detachable tread, which may be removed for repair or replacement without vulcanizing the rest of the tire.

The tire is made essentially the same as an ordinary tire in points of construction with the exception of the tread, which has a leather studded surface. It is claimed that while this construction does not decrease the resiliency of the tire it at the same time is proof against ruts and punctures and will withstand the action of oil and gasoline. The steel cup-shaped studs are anti-skid, due to their vacuum action.

Rubber Mallets

The rubber mallets made by the Thermoid Rubber Co., Trenton, N. J., are designed for use in factories, garages and by tire dealers and owners. The handle is made of second growth hickory and the rubber head is made of an especially tough compound designed to withstand very rough usage.

It is claimed that the use of these hammers will prevent injury to paint, woodwork, brass or other metal surfaces, and prevent damage to and greatly aid in taking off and putting on tires. The twelve-inch size lists at $1.25 and the sixteen-inch at $1.75.

Bukolt Highway Tire Protectors

The Bukolt Manufacturing Co., Stevens Point, Wis., is manufacturing a non-skid device, known as Bukolt Highway Tire Protector, which it is said will add greatly to the life of any tire by affording protection against punctures, blow outs, and undue wear on rough, rocky and frozen roads. Certain distinct features claimed by the makers include the following:

First, the device is made in sections and in the event of one section becoming damaged through accident, a new section may be inserted in a few minutes. Second, patented tightening links make it possible to put on protectors, remove, or repair them speedily without deflating tires, and hold them snugly to the tire at all times. Third, the ability to expell all mud, water, sand and gravel through the openings between the sections, and to keep the casing clean, smooth, dry and cool.

It is claimed that the Highway Protectors in no way affect the resiliency of the tires, and that when used there is a positive gain in traction power and speed, inasmuch as the protectors cause the car to cling more to the road. The company guarantees that every new tire of standard make will wear 20,000 miles when continually covered with Highway Protectors, and that the protectors themselves will wear 5,000 miles.

BUKOLT TIRE PROTECTORS

Notes of the Dealers

The Service Vulcanizing Co., Perry, Iowa, have improved their shop by the addition of new modern machinery.

The Albion Vulcanizing Co. has opened a vulcanizing shop at Albion, Mich.

The Commercial Tire Repair Co. have opened a repair shop at 672 Woodward Ave., Detroit, Mich.

Forsythe Rubber & Supply Co. has opened tire salesrooms at 1211 South Hope street, Los Angeles, Cal.

Pacific Tire Co. has opened a branch at 611 South Olive street, Los Angeles, Cal., with Eli Shiffner as manager.

E. J. Dougherty Tire Co., Kansas City, Mo., have removed to new quarters at 1911 McGee St. The company handle Diamond tires.

Harry Newman, Inc., St. Louis, Mo., has been named agent for Globe tires.

Federal Tire Co. has succeeded the Federal Tire & Repair Co., located at Eleventh avenue and Broadway, Nashville, Tenn. Harry J. Connor and Dan E. Power are the new owners. It will be under the management of J. E. Drake and George C. Loeffler, automobile tire men of many years' experience. The Federal Tire Co. will handle Federal tires exclusively.

The Star Taxi Co. is now in possession of its new home at 750 Iowa Street, Dubuque, Ia. In addition to operating taxicabs, the company has the agency for Stronghold tires. J. J. Jungwirth is manager of the firm.

Akron Tire Shop has been opened at 824 South Spring street, Los Angeles, Cal. D. Dayton Dresse is proprietor.

D. & M. Tire Agency, Tacoma, Wash., has opened a Mohawk tire salesroom at 750 Broadway. E. M. Rush is the proprietor.

George Margietta, Pittsburg, Kans., has opened a tire-supply house under the firm name of the Auto Tire Supply Co.

L. Holch has established a vulcanizing shop at Marshfield, Wis.

G. C. Smith has purchased the Bell Garage, Bell, Cal., and has installed a vulcanizing plant.

Tacoma Tire Service System, Inc., Tacoma, Wash., has moved to new quarters at 738 Broadway, where general offices, salesroom and showroom will be maintained.

U. S. Vulcanizer Mfg. Co., manufacturer of steam vulcanizing equipment, has opened a vulcanizing store at 276 Golden Gate avenue, San Francisco, Cal.

Cook & Rancel have leased the corner of Twenty-first street and Broadway, Oakland, Cal., and besides installing a complete vulcanizing plant will carry United States and Tyrian tires.

E. C. Stuart has removed his tire shop and vulcanizing plant to 3310 Broadway, Oakland, Cal., and will distribute the Mohawk and Goodyear tires.

A repair shop has been opened by the Norton Tire Repair Co. at Norton, Kan.

J. R. Loper, formerly of Upland, has opened an all night and day vulcanizing shop at 1036 South Main street, Los Angeles, Cal.

Manistee Tire & Repair Co., Manistee, Mich., will soon move into new quarters and will acquire the agency for Buick cars.

Richard E. Mittelstaedt has purchased a half interest in the California Tire & Rubber Co., San Francisco, Cal.

J. A. Baugh has sold a half interest in the Perfection Vulcanizing Works, Alameda, Cal., to L. W. Camper.

TIRE FABRICS

SEA ISLAND—EGYPTIAN—PEELER

John H. Meyer & Co., Inc.

50 UNION SQUARE - - - - - - - NEW YORK

WILLIAM L. LYALL, President and Treasurer
THOMAS M. GARDNER, Secretary

HENRY V. R. SCHEEL, Assistant Treasurer
T. J. KELLY, Superintendent

BRIGHTON MILLS

PASSAIC, NEW JERSEY

Tire Fabrics of Sea Island, Egyptian and Peeler Cottons

Special Constructions for Special Purposes Where Quality and Service are Foremost Considerations

ALL GOODS SOLD DIRECT

MAIN OFFICE, PASSAIC, New Jersey
New York Office, 257 Fourth Ave.

BOSTON YARN COMPANY

60 Federal Street Boston, Massachusetts

FABRICS

Auto Fabrics to Specification Sea Islands, Egyptians and Peelers

TIRE FABRICS

OF EVERY DESCRIPTION

TAYLOR, ARMITAGE & CO., Inc.

Equitable Building, 120 Broadway, New York

SEA ISLANDS EGYPTIANS PEELERS

FABRICS TO SPECIFICATION

PASSAIC COTTON MILLS AMERICAN TIRE FABRIC CO.

MARLBORO COTTON MILLS

McColl, S. C.

Tire Fabrics

Combed Sea Island, combed and carded Peelers and Egyptians.

Sold direct, or through Chas. A. Meyer, 350 Broadway, New York City, N. Y.

Yarns

4s to 60s, combed and carded, single and ply; warps, skeins, tubes and cones.

Sold direct, or through E. D. Tannahill, 350 Broadway, New York City, N. Y.

TIRE FABRICS

SEA ISLANDS, EGYPTIANS, PEELERS

CHAS. A. MEYER

350 BROADWAY, NEW YORK

MARLBORO TIRE FABRICS—

J. H. LANE CO.

334 FOURTH AVE.

NEW YORK

Motor Tire Ducks Hose and Belting Ducks Yarns

CHICAGO BOSTON

TIRE FABRICS

Made of Yarns of Our Own Spinning, and with Machinery of Latest and Most Approved Type

The Fabric for Endurance

MANHASSET MFG. COMPANY, Providence, R. I.

TYPKE & KING, Ltd.,
ESTABLISHED 1883

Head Offices and Works

Crown Chemical Works
Commonside East, Mitcham, England
ESTABLISHED 1883

CRIMSON AND GOLDEN **SULPHURETS OF ANTIMONY**

Guaranteed Reliable, and Not to Vary, Always Containing Same Percentage of Free Sulphur
Made with any percentage of Free Sulphur desired

BLACK AND WHITE SUBSTITUTES, BLACK HYPO, ZINC SULPHIDE, ETC.

EXTENSION BLADES AND HANDLES

I.P.HYDE
Mention Extension Blades and Handles to any experienced rubber mill worker and his mind just naturally turns to the I. P. HYDE Brand.—Why? Because he has come to know that they are right for his use, made right for rubber mill work and work right. Let us send you Catalog - R, shows 80 different styles of rubber cutting knives.
HYDE MFG. CO.
Southbridge Mass.

I.P.HYDE

EMBOSSING CALENDERS

For Artificial Leather, Oil Cloth,
Carriage and Automobile Covers

DRYING MACHINES

with Copper or tinned iron Cylinders for Cotton Ducks, Drills and Sheetings

The Textile-Finishing Machinery Co.
Office, No. 83 Exchange Place
PROVIDENCE, R. I.

LITHOPHONE
MAGNESIA CARBONATE
SULPHUR FLOWERS
PARAFFINE WAX

All Chemicals for Rubber Trade

RUBBER MANUFACTURERS SUPPLY CO.
17 Battery Place, New York
Cable "Rumasu" New York

THE AKRON EQUIPMENT COMPANY
C. R. QUINE, *President*

Molds, Cores and Machinery for Tire Makers

AKRON, OHIO

We Are Now Supplying The World
WITH
UNIVERSAL STEEL CALENDER STOCK SHELLS

in 4", 5", 6", 8" and 10" diameters, any lengths from 4" to 100", any size square mandrel holes.

Materials always on hand.
Try us on that rush order.

W. F. GAMMETER Cadiz, Ohio

OBALSKI & SWEENEY, Inc.

CRUDE RUBBER

AND KINDRED PRODUCTS

Importers and Traders Building 59-61 Pearl Street

NEW YORK

The Carter Bell M'f'g *Co.*

Highest Grade

RUBBER SUBSTITUTES

White, Brown & Black

150 Nassau Street New York

ANTIMONY SULPHURET

Every Manufacturer coming to us for SULPHURET has found one of our grades suitable for his product

THE HARSHAW FULLER & GOODWIN CO.

Cleveland

Antimony Works at Elyria, Ohio

MAGNESIA

CARBONATE K&B OXIDE

Special 1918 Contract Prices

KATZENBACH & BULLOCK COMPANY, Inc.

NEW YORK TRENTON BOSTON CHICAGO SAN FRANCISCO

TYSON BROS., INC.

CARTERET, N. J.

MANUFACTURERS

The best grades of Rubber Substitutes and Chemicals for all branches of the Rubber Trade

Western Representative
J. A. KENDALL
524 Second National Bldg., Akron, Ohio

STOCK CARRIED IN AKRON

MAGNESIA

Double Calcined Heavy — Carbonate Light Calcined

General Magnesite & Magnesia Co.

29th Street and Montgomery Avenue
Philadelphia

WHITING

A PRODUCT OF THE U. S. A.

A contract with us means the guarantee of a regular and uninterrupted supply, reliable in quality and economical in cost.

STANDARD AND SPECIAL QUALITIES SUITABLE FOR ALL RUBBER NEEDS

INDUSTRIAL CHEMICAL CO.

200 Fifth Avenue, New York City

Manufacturers

RUBRAX

MANUFACTURERS
of
Elastic
Hydro-Carbons

THE U.S. ASPHALT REFINING CO. RUBRAX QUALITY FIRST TRADE MARK

Plants and Branches at
BALTIMORE, MARYLAND
CARTERET, NEW JERSEY
PHILADELPHIA, PENNSYLVANIA

THE INTEROCEAN OIL COMPANY
90 West Street: NEW YORK

BRANDER & CURRY
INCORPORATED
FORTY-SECOND STREET BUILDING
NEW YORK, U. S. A.
AGENTS FITCHBURG DUCK MILLS
SEA ISLAND, EGYPTIAN AND PEELER
TIRE FABRICS
CHAFING STRIPS AND LENO BREAKERS
CORD YARNS AND CORD FABRICS, SHEETINGS AND DRILLS
FOR AUTOMOBILE AND RUBBER TRADES A SPECIALTY

SULPHUR

BROOKLYN SULPHUR WORKS
FLOUR SULPHUR
Extra Fine and Free from Grit.
"VELVET SULPHUR" for
RUBBER Manufacturers
BATTELLE & RENWICK
80 Maiden Lane New York, N. Y.

20" x 20"

HYDRAULIC
STEAM PLATE
PRESS
FOR
Mechanical Goods
Notice air-cooled ram. Long distance between hot steam plate and cylinder packing. Broad foundation, etc. Send for catalogue.
BOOMER & BOSCHERT PRESS CO.
420 West Water Street
SYRACUSE, N. Y.

THE H. O. CANFIELD CO.
MANUFACTURE
Moulded Specialties, Plumbers' Rubber Goods, Valves, Gaskets; Hose Washers, and Cut Washers of all kinds
Write for prices and samples
Office and Works BRIDGEPORT, CT.

CHAS. E. WOOD
Importers and Traders Building 24-26 Stone St., New York
BROKERS IN
Crude Rubber, Balata, Gutta Percha and Kindred Products
Prompt attention and efficient service to buyer and seller alike
Telephone Broad 1485 Akron Office: 328 Hamilton Bldg., Phone 7007 Main

SERVICE AND VALUE FOR TIRE MANUFACTURERS

The TIRE NEWS section of THE RUBBER AGE AND TIRE NEWS presents the news of your plant, the personalities behind your trademark, and facts which should be impressed upon the distributor, jobber, and dealer.

The Technical Course in Rubber Manufacture, by H. E. Simmons of the Municipal University of Akron, has an important educational value in your plant. It is read by your chemists, superintendents, and ambitious operatives. Ask them.

THE RUBBER AGE AND TIRE NEWS

The LOEWENTHAL COMPANY

Most Efficient Service in
Buying and Selling

SCRAP RUBBER

BROOKLYN
23 HEYWARD ST.

AKRON
Delaware Bldg.

CHICAGO
947 W. 20th ST.

THE DIE SINKING & MACHINE CO.

MOLD MAKERS AND ENGRAVERS

MANUFACTURERS OF

Molds for Syringe Bags Hot Water Bottles and Mechanical Goods : :

Hose Brands and Belting Dies. Steel Stamps. Aluminum Brands. Serial Numbers. Cutting Dies. Tubing Dies. Sole and Heel Molds.

Catalogue sent on request AKRON, OHIO

JONES & KUHLKE

MANUFACTURERS OF

FOR GENERAL RUBBER WORK **MOLDS** FOR AUTOMOBILE TIRES

CORES AND SPECIAL MACHINERY

48-58 West Exchange Akron, Ohio

HOUSATONIC

INSULATING,
TUBING *and*
STRAINING
MACHINES,
SPECIAL
MACHINERY,
RUBBER MOLDS

The Housatonic Machine & Tool Co., Bridgeport, Conn.

THOMAS-HYDES

105 EAST HANOVER ST. TRENTON, N.J.

CRUDE RUBBER

Washed,

Vacuum Dried or Refined

TIRE EQUIPMENT BUILDERS

Tire Repair Equipment Tubing Machines General Machinists

Molds — THE AKRON — Equipment Built Right for Right Building — RUBBER MOLD AND MACHINE CO. — Cores

THE AKRON RUBBER MOLD & MACHINE CO.

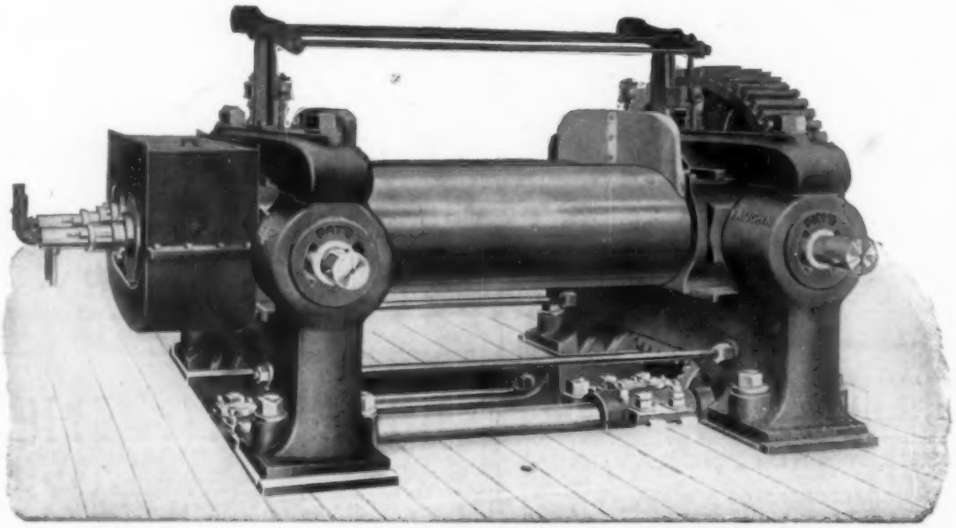
917-923 Sweitzer Avenue AKRON, OHIO

FOR SALE—Rubber Mill Machinery. One 4½ Allen Double Feed Tube Machine, equipped to run treads with variable speed conveyor belt. Motor driven, direct connected on unit base plate with tuber motor, 440 volts, 3 phase, 60 cycles with controller. Inquire THE GENERAL TIRE & RUBBER CO., AKRON, OHIO.

WANTED—Automobile Tire Man to work on tire constructions in large automobile factory located in central west. Will not consider applications from men who have not had two or three years' practical experience in the designing and constructing of automobile tires. In replying state age—whether married or single—salary expected and names of companies where experience has been gained. Address Box 61.

WANTED—Foreman competent to run spreading machines and familiar with compounds. Address Box 63.

WANTED—Six inch or eight inch rubber strainer. Give full particulars and photo if possible. Address Detroit Insulated Wire Co., Detroit, Mich.



VAUGHN MACHINERY

Located at the very heart of the rubber industry, our Engineers are in constant touch with the world's largest producers of rubber goods of every description, which gives them first hand knowledge of the requirements of present day practice.

Safe--Economical--Efficient

THE TURNER, VAUGHN & TAYLOR CO.

Cuyahoga Falls, Ohio